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Results of Testing for Intestinal Parasites by State Diagnostic Laboratories, United States, 1987



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**Most Recent Reports Published
in the *MMWR* Surveillance Summaries**

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AIDS/HIV		
Distribution by Racial/Ethnic Group	NCID	1988; Vol. 37, No. SS-3
Among Black and Hispanic Children and Women of Childbearing Age	NCEHC	1990; Vol. 39, No. SS-3
Behavioral Risk Factors	NCCDHP	1990; Vol. 39, No. SS-2
Birth Defects		
B.D. Monitoring Program (see also Malformations)	NCEHC	1990; Vol. 39, No. SS-4
Contribution of B.D. to Infant Mortality		
Among Minority Groups	NCEHC	1990; Vol. 39, No. SS-3
<i>Campylobacter</i>	NCID	1988; Vol. 37, No. SS-2
Coal Workers' Health (see also Mining)	NIOSH	1985; Vol. 34, No. 1SS
Congenital Malformations, Minority Groups	NCEHC	1988; Vol. 37, No. SS-3
Dengue	NCID	1985; Vol. 34, No. 2SS
Dental Caries and Periodontal Disease Among Mexican-American Children	NCPS	1988; Vol. 37, No. SS-3
Ectopic Pregnancy	NCCDHP	1990; Vol. 39, No. SS-4
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Elderly, Hospitalizations Among	NCCDHP	1991; Vol. 40, No. SS-1
Endometrial and Ovarian Cancers	EPO, NCCDHP	1986; Vol. 35, No. 2SS
<i>Escherichia coli</i> O157	NCID	1991; Vol. 40, No. SS-1
Foodborne Disease	NCID	1990; Vol. 39, No. SS-1
Gonococcal Infection	NCPS, NCID	1984; Vol. 33, No. 4SS
Gonorrhea and Salpingitis, Teenagers	NCPS, NCID	1983; Vol. 32, No. 3SS
Hepatitis	NCID	1985; Vol. 34, No. 1SS
Hepatitis, Viral	NCID	1983; Vol. 32, No. 2SS
Homicide	NCCDHP	1983; Vol. 32, No. 2SS
Homicides, Black Males	NCEHC	1988; Vol. 37, No. SS-1
Hysterectomy	NCCDHP	1986; Vol. 35, No. 1SS
Infant Mortality (see also National Infant Mortality; Birth Defects; Postneonatal Mortality)	NCEHC	1990; Vol. 39, No. SS-3
Injury		
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Falls, Deaths	NCEHC	1988; Vol. 37, No. SS-1
Firearm-Related Deaths, Unintentional	NCEHC	1988; Vol. 37, No. SS-1
In the Home, Persons Under 15 Years of Age	NCEHC	1988; Vol. 37, No. SS-1
Motor Vehicle-Related Deaths	NCEHC	1988; Vol. 37, No. SS-1
Objectives of Injury Control, State and Local	NCEHC	1988; Vol. 37, No. SS-1
Objectives of Injury Control, National	NCEHC	1988; Vol. 37, No. SS-1
Residential Fires, Deaths	NCEHC	1988; Vol. 37, No. SS-1
Tap Water Scalds	NCEHC	1988; Vol. 37, No. SS-1
Lead Poisoning, Childhood	NCEHC	1990; Vol. 39, No. SS-4
Low Birth Weight	NCCDHP	1990; Vol. 39, No. SS-3
Malaria, Imported	NCID	1983; Vol. 32, No. 3SS
Malformations (see also Birth Defects)	NCEHC	1985; Vol. 34, No. 2SS
Maternal Mortality	NCCDHP	1991, Vol. 40, No. SS-2
Mining (see also Coal Workers' Health)	NIOSH	1986; Vol. 35, No. 2SS

*All abbreviations are listed at end of inventory. Readers should check individual summaries when more than one CIO is responsible.

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in the *MMWR* Surveillance Summaries — Continued**

Subject	Responsible CIO*	Most Recent Report
National Infant Mortality (see also Infant Mortality; Birth Defects)	NCCDPHP	1989; Vol. 38, No. SS-3
Nosocomial Infection	NCID	1986; Vol. 35, No. 1SS
Occupational Injuries/Disease		
Among Loggers	NIOSH	1983; Vol. 32, No. 3SS
Hazards, Occupational	NIOSH	1985; Vol. 34, No. 2SS
In Meatpacking Industry	NIOSH	1985; Vol. 34, No. 1SS
State Activities	NIOSH	1987; Vol. 36, No. SS-2
Treated in Hospital Emergency Rooms	NIOSH	1983; Vol. 32, No. 2SS
Ovarian Cancer (see Endometrial and Ovarian Cancers)		
Pediatric Nutrition	NCCDPHP	1983; Vol. 32, No. 4SS
Pelvic Inflammatory Disease	NCPS	1983; Vol. 32, No. 4SS
Plague	NCID	1985; Vol. 34, No. 2SS
Plague, American Indians	NCID	1988; Vol. 37, No. SS-3
Pneumoconiosis, Coal Miners	NIOSH	1983; Vol. 32, No. 1SS
Postneonatal Mortality	NCCDPHP	1991; Vol. 40, No. SS-2
Pregnancy, Teenage	NCCDPHP	1987; Vol. 36, No. 1SS
Psittacosis	NCID	1983; Vol. 32, No. 1SS
Rabies	NCID	1989; Vol. 38, No. SS-1
Racial/Ethnic Minority Groups	Various	1990; Vol. 39, No. SS-3
Reye Syndrome	NCID	1984; Vol. 33, No. 3SS
Rocky Mountain Spotted Fever	NCID	1984; Vol. 33, No. 3SS
Rubella and Congenital Rubella	NCPS	1984; Vol. 33, No. 4SS
<i>Salmonella</i>	NCID	1988; Vol. 37, No. SS-2
Salpingitis (see Gonorrhea and Salpingitis)		
Smoking	NCCDPHP	1990; Vol. 39, No. SS-3
Sudden Unexplained Death Syndrome Among Southeast Asian Refugees	NCEHC, NCPS	1987; Vol. 36, No. 1SS
Suicides, Persons 15-24 Years of Age	NCEHC	1988; Vol. 37, No. SS-1
Summer Mortality	NCEH	1983; Vol. 32, No. 1SS
Syphilis	NCPS	1991; Vol. 40, No. SS-3
Toxic-Shock Syndrome	NCID	1984; Vol. 33, No. 3SS
Trichinosis	NCID	1991; Vol. 40, No. SS-3
Tubal Sterilization Among Women	NCCDPHP	1983; Vol. 32, No. 3SS
Tuberculosis	NCPS	1991; Vol. 40, No. SS-3
Water-Related Disease	NCID	1991; Vol. 40, No. SS-3

Abbreviations

NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCEHC	National Center for Environmental Health and Injury Control
NCID	National Center for Infectious Diseases
CIO	Centers/Institute/Offices
NCPS	National Center for Prevention Services
EPO	Epidemiology Program Office
NIOSH	National Institute for Occupational Safety and Health

Behavioral Risk Factor Surveillance, 1986-1990

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Summary

Since 1984, an increasing number of states (including the District of Columbia) have participated in the Behavioral Risk Factor Surveillance System (BRFSS). This report provides state-specific estimates of the prevalence of selected health-risk behaviors for the years 1986 through 1990. Apparent trends and progress toward several of the year 2000 national health objectives are discussed, both for the entire adult population (persons ages ≥ 18 years) and selected high-risk demographic subgroups. Now that BRFSS includes 45 states and covers over 90% of the nation's adult population, it can be used both as a measure of state-specific risk factor prevalence and an indicator of national trends.

INTRODUCTION

In the 1960s and 1970s, the role of certain personal behaviors—such as cigarette smoking, excessive alcohol consumption, and physical inactivity—became recognized as risk factors for the leading causes of death and disability. High-risk behaviors continue to contribute heavily to morbidity and mortality from noninfectious diseases, and their reduction is a cornerstone of the year 2000 national health objectives (1).

From 1981 through 1983, 25 state health departments, using random-digit-dialed telephone techniques, conducted point-in-time statewide behavioral risk surveys in cooperation with the CDC. In 1984, the Behavioral Risk Factor Surveillance System (BRFSS) was established; 15 states conducted monthly interviews throughout that year. The goal of the system was to collect, analyze, and interpret state-specific behavioral risk factor data that could be used to plan, implement, and monitor public health programs (2). The number of participating states (including the District of Columbia) increased to 45 in 1990, and the average number of completed interviews per state increased from about 1,200 to more than 1,800. In 1987, questions on preventive medical practices such as cholesterol screening and mammography were added.

Information gathered under the BRFSS has proved useful to state health departments in supporting risk reduction and disease-prevention activities. For example, BRFSS smoking-prevalence data were instrumental in the passage of the New Hampshire Indoor Smoking Act. This act totally prohibits smoking in public schools

*See Appendix 1.

and acute-care medical facilities, as well as in all other workplaces that do not have smoking areas that are effectively separated from nonsmoking areas. Because comparable methods are used from state to state and from year to year, states can compare risk factor prevalences with other states and monitor the effects of interventions over time. The use of consistent methods in a large number of states also permits the assessment of geographic patterns of risk-factor prevalence.

Prevalence estimates for several of the year 2000 national health objectives can be measured using BRFSS data (Table 1) (1). For these objectives, BRFSS serves as a source of baseline data as well as a means of tracking progress. Because BRFSS contains demographic and socioeconomic information, it can be used to evaluate progress for target population subgroups. In this article, state-specific data on personal high-risk behaviors related to cardiovascular disease and injuries are presented for the period 1986–1990.

METHODS

Sampling

The number of participating states (including the District of Columbia) has ranged from 26 in 1986 to 45 in 1990. Using random-digit dialing, each state selects a random sample of its noninstitutionalized adult population (ages ≥ 18 years) who have telephones. In 1990, 37 states used a multistage cluster-sampling design based on the Waksberg method (3). To meet individual needs, other states have chosen to use different sampling methods, such as simple-random or stratified sample designs.

Questionnaire

The interviewing instrument consists of three parts: a) a core of questions asked by all states, b) standardized modules of questions developed by CDC and added at each state's discretion, and c) questions developed at the discretion of each participating state to meet its specific needs. When possible, questions have been adopted from national surveys, such as the National Health and Nutrition Examination Surveys (NHANES) and the National Health Interview Surveys (NHIS).

Data Processing and Analysis

Upon completion of the interviewing cycle each month, the data are sent to CDC for editing. In 1990, 36 states used computer-assisted telephone interviewing (CATI), which permits direct entry of data into a computer file. CATI facilitates interviewer monitoring, data coding and entry, and quality-control procedures. The edited data are then weighted to the age-, race-, and gender-specific population counts from the most current census (or intercensal estimate) in each state, as well as for the respondent's probability of selection (2). These weights are used to estimate state population prevalence rates. SESUDAAN, a procedure for analyzing complex sample-survey data, is used to calculate the standard errors for the prevalence estimates (4).

This report provides state-specific prevalences (with 95% confidence intervals) for seven risk factors (defined below) for the years 1986–1990. Because BRFSS data sets are sometimes updated after initial publication, certain prevalence estimates in this report may differ slightly from those reported earlier (5–7).

Definitions of Risk Factors

Risk factors included in BRFSS were defined as follows:

- **No leisure-time physical activity**—no exercise, recreation, or physical activities (other than regular job duties) during the previous month.

- **Sedentary lifestyle**—fewer than three 20-minute sessions of leisure-time physical activity per week.
- **Smoking**—current use of cigarettes by someone who has ever smoked at least 100 cigarettes.
- **Overweight**—a body mass index ($BMI = \text{weight}[\text{kg}] / \text{height}[\text{m}^2]$) ≥ 27.8 for men and ≥ 27.3 for women. These values approximate the gender-specific eighty-fifth percentile of BMI for U.S. 20- to 29-year-olds, estimated from the NHANES II.
- **Binge drinking**—consumption of five or more alcoholic beverages on at least one occasion during the past month.
- **Drinking and driving**—operation of a motor vehicle after drinking too much alcohol at least once in the past month.
- **Safety belt nonuse**—seat belts used sometimes, seldom, or never (as opposed to always or nearly always).

RESULTS

No Leisure-time Physical Activity

In 1990, the proportion of adults ages ≥ 18 years who reported that they engaged in no leisure-time physical activity varied by state nearly threefold, ranging from 18.0% in Montana to 51.9% in the District of Columbia (median = 28.7%) (Table 2). The percentage who did not engage in any leisure-time physical activity was especially high among a) persons ages ≥ 65 years, ranging from 23.4% in Arizona to 62.1% in the District of Columbia (median = 40.1%), and b) persons with family income $\leq \$20,000$, ranging from 24.5% in Washington to 61.1% in the District of Columbia (median = 36.9%). The median prevalence in 1990 was lower than in any of the previous 4 years for adults ages ≥ 18 years and for adults ages ≥ 65 years (Table 2), but there was not a consistent downward trend (Figure 1).

Each year from 1986 through 1990, the prevalence of this risk factor among adults ages ≥ 18 years was lowest in Montana. For persons ages ≥ 65 years, four western states had the lowest prevalences: Utah in 1986, California in 1987, Arizona in 1988 and 1990, and Oregon in 1989. For persons with household income $\leq \$20,000$, the prevalences were lowest in two western states: Montana in 1986 through 1989, and Washington in 1990. For all three demographic groups, the District of Columbia reported the highest prevalences from 1988 through 1990.

Sedentary Lifestyle

When defined as less than three 20-minute sessions of leisure-time physical activity per week, the prevalence of sedentary lifestyle for adults ages ≥ 18 years in 1990 ranged from 44.5% in Colorado to 73.3% in the District of Columbia (median = 58.5%) (Table 3). For adults ages ≥ 65 years, the prevalence ranged from 46.8% in Colorado to 78.3% in South Carolina (median = 63.9%). For persons with a family income $\leq \$20,000$, the prevalence ranged from 48.7% in Colorado to 78.5% in the District of Columbia (median = 62.8%). From 1986 through 1990, the median prevalence did not vary appreciably by year for any of these demographic groups. The lowest prevalences occurred uniformly in western states; the highest prevalences were reported most frequently in the District of Columbia, New York, and Kentucky.

Smoking

In 1990, the proportion of adults ages ≥ 18 years who reported that they were smokers ranged from 16.8% in Utah to 29.1% in Kentucky and Michigan (median = 22.7%) (Table 4); 1990 was the first year the smoking prevalence was below 30% for every BRFSS state. For persons with a high school education or less, smoking prevalence ranged from 21.4% in the District of Columbia to 34.3% in Michigan (median = 28.7%).

The median smoking prevalence for adults ages ≥ 18 years declined steadily from 26.5% in 1986 to 22.7% in 1990 (Figure 2). For persons with a high school education or less, the decline was smaller—from 30.2% to 28.7%. Smoking prevalence was highest in Kentucky each year from 1986 to 1990 among adults ages ≥ 18 years and each year from 1986 to 1989 among adults with a high school education or less.

In 1990, 34 (76%) of the 45 BRFSS states reported that the smoking prevalence among adults was below 25%, thus achieving the 1990 health objective (8); in 1986, only seven (27%) of 26 BRFSS states had met this objective. Utah reported the lowest prevalence of smoking among adults each year from 1986 to 1990. For adults with a high school education or less, the lowest prevalence occurred in Idaho in 1986, Utah in 1987 and 1989, and the District of Columbia in 1988 and 1990.

Overweight

In 1990, the proportion of adults who were overweight ranged from 16.3% in Colorado to 27.4% in the District of Columbia (median = 22.7%) (Table 5). For women with a family income $\leq \$20,000$, the prevalence ranged from 18.4% in Montana to 37.5% in the District of Columbia (median = 26.6%); throughout the study period the median prevalence for this group was consistently 3 to 4 percentage points higher than for the general adult population. The median prevalence was higher in 1990 than in any of the 3 previous years, both for the general adult population and for women with a family income $\leq \$20,000$.

For these same groups, the lowest prevalence of overweight occurred in a western state each year. For adults ages ≥ 18 years, the lowest prevalence was in New Mexico in 1987 through 1989 and in Colorado in 1990; for women with a family income $\leq \$20,000$, the lowest prevalence was in Hawaii in 1987, Montana in 1988 and 1990, and Utah in 1989.

Binge Alcohol Consumption

In 1990, the proportion of adults ages ≥ 18 years who reported binge alcohol consumption varied nearly fivefold, ranging from 5.5% in the District of Columbia to 26.8% in Wisconsin (median = 15.2%) (Table 6). Among men ages 18–34 years, prevalences were two to three times higher than among adults overall, ranging from 13.8% in the District of Columbia to 61.1% in Wisconsin (median = 35.2%).

The median prevalence of binge drinking for adults ages ≥ 18 years decreased from 16.4% in 1986 to 15.3% in 1987 and then remained essentially unchanged through the next 3 years. For men ages 18–34 years, the median prevalence decreased gradually from 38.0% in 1986 to 35.2% in 1990. The District of Columbia had the lowest adult prevalence each year from 1988 through 1990, and, in 1989 and 1990, the lowest prevalence for males ages 18–34 years. For both age groups, Wisconsin had the highest prevalence each year from 1986 through 1990.

Drinking and Driving

In 1990, the proportion of adults ages ≥ 18 years who reported drinking and driving ranged from 0.7% in Maine to 5.9% in Wisconsin (median = 2.9%) (Table 7). The prevalence for men ages 18–34 years was substantially higher, ranging from 1.2% in Maine to 16.8% in Nebraska (median = 7.8%). The median prevalence declined gradually for adults ages ≥ 18 years (from 3.6% in 1986 to 2.9% in 1989 and 1990), as well as for men ages 18–34 years (from 10.0% in 1986 to 7.8% in 1990).

In 1990, four states—Kentucky, Maine, Maryland, and West Virginia—reported an adult prevalence of less than 1% for drinking and driving; before 1990, no state had reported such a low prevalence. Wisconsin had either the highest or the second highest reported prevalence each year from 1986 to 1990, both for adults ages ≥ 18 years and men ages 18–34 years.

Safety Belt Nonuse

In 1990, the proportion of adults ages ≥ 18 years who reported that they wore safety belts sometimes, seldom, or never while driving or riding in a motor vehicle ranged from 4.9% in Hawaii to 59.6% in North Dakota (median = 25.9%) (Table 8); the median prevalence of reported safety belt nonuse decreased steadily from 47.9% in 1986. Hawaii had the lowest reported prevalence for each year between 1986 and 1990—below 10% each year. Reported nonuse was highest in North Dakota and South Dakota each year from 1987 through 1990.

DISCUSSION

Data from the BRFSS have consistently shown considerable state-to-state variation in the self-reported prevalence of behavioral risk factors (5–7). This article is the first to use BRFSS data to report on progress toward some of the year 2000 health objectives. Despite increasing evidence and public information about the health benefits of regular physical activity, BRFSS data show that a substantial proportion of persons in the United States remain sedentary. The median proportion of adults who engaged in less than three 20-minute sessions of leisure-time physical activity per week was consistently nearly 60% throughout the period 1986–1990 and was consistently above 60% for adults with income $\leq \$20,000$ and for persons ages ≥ 65 years. Approximately half of these adults reported that they did not engage in any leisure-time physical activity. Substantial behavior change will be necessary to meet the year 2000 objective (Figure 1).

BRFSS estimates of the proportion of adults who engage in no leisure-time physical activity are similar to, but slightly higher than, those reported from the NHIS. For example, BRFSS median prevalences for the years 1986 through 1990 ranged from 28.7% to 31.9%, although the most recent (1985) NHIS prevalence was 27.5% (9). NHIS data were used to establish the baseline prevalences for the year 2000 objective for this risk factor (1).

BRFSS data indicate progress toward decreased smoking prevalence in the general population. The median prevalence among adults ages ≥ 18 years decreased 3.8% from 1986 through 1990, and the percentage of participating states that had achieved the 1990 health objective increased from 27% in 1986 to 76% in 1990. The median prevalence among adults with a high school education or less, however, decreased 1.5%. This differential decrease based on educational level is consistent with the trend previously described during the period 1974 through 1985 (10). If this

trend continues, most states will achieve the year 2000 objective for the general population, but few will achieve it for the lower-education population (Figure 2).

BRFSS data suggest that no progress is being made toward the year 2000 objectives for overweight and that in 1990 the prevalence of overweight may have increased, both for adults ages ≥ 18 years and for lower-income women. Additional data will be needed to determine whether the apparent increased prevalence of overweight in 1990 indicates the beginning of a trend.

BRFSS prevalence estimates for overweight are substantially lower than estimates obtained by direct measurement of height and weight from NHANES. For example, the NHANES estimate of the prevalence of overweight in 1976 through 1980 for persons ages 20–74 years (26%) (1) was higher than the estimated BRFSS median prevalences of overweight among persons ages ≥ 18 years from 1986 through 1990 (range = 20.4% to 22.7%). The most likely explanation for this discrepancy is that people tend to underreport their weight. Because of this reporting bias, a substantial proportion of states reported BRFSS prevalence estimates for overweight that are below the year 2000 objectives. BRFSS data on cardiovascular risk factors indicate that, although substantial progress has been made in the general population toward reducing the prevalence of cigarette smoking, little or no progress has been made toward reducing the prevalence of obesity or physical inactivity (Figure 3).

BRFSS data suggest that during the period 1986–1990, the prevalence of binge drinking among the general adult population did not change and, possibly, that a gradual decrease occurred among men ages 18–34 years. Although binge drinking among the general population is not targeted by the national health objectives, the objective for college students is $\leq 32\%$; in 1990, 28 of the 45 BRFSS states reported prevalences above this level for men ages 18–34 years.

BRFSS data indicate that the prevalence of drinking and driving decreased from 1986 through 1990 for adults ages ≥ 18 years and for men ages 18–34 years. Young men continued to be a high-risk group, however. For example, in four states in 1990, more than 10% of men ages 18–34 years reported drinking and driving.

Reported safety belt nonuse decreased steadily from 1986 through 1990, concurrent with the enactment of safety belt legislation in an increasing number of states. Hawaii, the only state where reported safety belt use is nearly universal, is one of only nine states with a safety belt law that allows for primary enforcement, i.e., a motor vehicle can be stopped by a law enforcement officer for a safety belt use law violation alone, rather than requiring that a vehicle must first be stopped for some other violation (secondary enforcement).

In 1990, six of the 45 BRFSS-participating states reported a safety-belt-wearing prevalence consistent with the year 2000 objective for nonuse ($\leq 15\%$); however, in past analyses of BRFSS data, self-reporting of "always or nearly always" wearing a safety belt has exceeded estimates of belt wearing from observational surveys by approximately 27% (range = 12% to 39%) (11). Thus, substantial additional progress toward increased safety belt wearing will be required for most states to achieve the year 2000 objective.

Although we have used the median prevalence of all participating BRFSS states to approximate national prevalence, this measure is limited by a) the changing number of participating states from year to year, and b) the consideration of each state equally, regardless of population size. As BRFSS approaches full national coverage,

the number of participating states will become nearly constant, and the median of participating states will provide a more stable approximation of national prevalence. Comparing the weighted prevalence of a risk factor for a constant group of aggregated states over a period of years can provide a more precise method of testing for trends in BRFSS data.

Future articles will report on progress toward year 2000 health objectives for preventive medical services addressed in BRFSS. The primary purpose of BRFSS will continue to be the production of state-specific data in order to plan, implement, and monitor public health programs.

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TABLE 1. Selected year 2000 national health objectives

Objectives	Target prevalence
Overweight (Objective 1.2)	
Persons ages ≥ 20 years	$\leq 20\%$
Low-income women ages ≥ 20 years	$\leq 25\%$
No leisure-time physical activity (Objective 1.5)	
Persons ages ≥ 6 years	$\leq 15\%$
Persons ages ≥ 65 years	$\leq 22\%$
Low-income persons (family income $\leq \$20,000$)	$\leq 17\%$
Smoking (Objective 3.4)	
Persons ages ≥ 20 years	$\leq 15\%$
Persons ages ≥ 20 years with a high school education or less	$\leq 20\%$
Safety belt nonuse (Objective 9.12)	
All motor vehicle occupants	$\leq 15\%$

TABLE 2. Prevalence of no leisure-time physical activity* among selected adult demographic groups in participating states—Behavioral Risk Factor Surveillance System, 1986–1990

State	1986						1987					
	≥18 years		≥65 years		Low income†		≥18 years		≥65 years		Low income	
	%	(CI)‡	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)
Alabama	43.4	(5.0)	42.5	(9.2)	50.9	(7.7)	32.8	(2.8)	42.9	(7.1)	41.6	(4.5)
Arizona	25.7	(2.9)	34.6	(7.6)	29.0	(5.1)	27.5	(2.6)	32.9	(6.5)	32.9	(5.2)
California	27.2	(2.6)	34.2	(6.6)	34.0	(4.6)	26.1	(2.4)	27.8	(5.7)	32.8	(4.3)
Colorado	—	—	—	—	—	—	—	—	—	—	—	—
Connecticut	—	—	—	—	—	—	—	—	—	—	—	—
Delaware	—	—	—	—	—	—	—	—	—	—	—	—
Dist. of Col.	43.9	(3.4)	52.4	(7.5)	48.9	(5.2)	38.7	(3.4)	59.0	(8.2)	44.8	(6.2)
Florida	31.2	(3.1)	31.6	(6.1)	38.9	(5.1)	30.7	(3.0)	39.1	(6.1)	37.0	(4.9)
Georgia	38.0	(3.1)	49.6	(7.3)	42.7	(5.4)	33.4	(2.8)	49.3	(6.9)	39.4	(5.5)
Hawaii	29.9	(3.1)	26.1	(6.9)	32.5	(5.2)	25.6	(2.7)	31.5	(7.7)	29.5	(5.1)
Idaho	19.9	(2.8)	33.1	(6.5)	23.4	(4.0)	22.0	(2.3)	32.9	(5.2)	25.7	(3.2)
Illinois	40.3	(3.2)	61.8	(7.7)	46.0	(5.1)	31.9	(2.5)	44.5	(5.9)	41.4	(4.4)
Indiana	31.9	(2.8)	55.5	(7.1)	41.4	(4.7)	29.2	(2.1)	40.3	(5.2)	34.0	(3.8)
Iowa	—	—	—	—	—	—	—	—	—	—	—	—
Kentucky	45.9	(3.3)	70.5	(6.2)	52.0	(4.7)	39.5	(2.5)	56.4	(5.3)	47.8	(3.7)
Louisiana	—	—	—	—	—	—	—	—	—	—	—	—
Maine	—	—	—	—	—	—	33.5	(2.9)	42.4	(6.7)	40.7	(4.6)
Maryland	—	—	—	—	—	—	30.9	(3.4)	52.0	(8.6)	46.1	(7.1)
Massachusetts	30.6	(3.2)	40.7	(7.3)	40.0	(5.6)	27.3	(2.7)	44.4	(6.8)	36.2	(4.9)
Michigan	—	—	—	—	—	—	—	—	—	—	—	—
Minnesota	24.7	(1.7)	38.6	(4.7)	30.7	(2.8)	25.8	(1.7)	38.6	(4.2)	31.6	(2.9)
Mississippi	—	—	—	—	—	—	—	—	—	—	—	—
Missouri	34.4	(3.6)	43.2	(7.6)	41.6	(5.6)	30.0	(2.7)	46.3	(6.7)	36.5	(4.3)
Montana	13.7	(2.2)	25.3	(5.6)	15.6	(3.4)	14.0	(2.2)	28.3	(5.6)	16.4	(3.4)
Nebraska	—	—	—	—	—	—	32.4	(3.0)	43.2	(6.5)	35.5	(4.4)
New Hampshire	—	—	—	—	—	—	28.5	(2.7)	40.5	(7.7)	35.9	(5.7)
New Mexico	44.8	(3.4)	42.0	(8.5)	49.3	(5.0)	36.8	(3.4)	52.1	(7.7)	44.1	(4.9)
New York	34.6	(3.3)	50.1	(7.7)	38.2	(5.5)	38.3	(3.2)	57.3	(6.9)	42.6	(5.4)
North Carolina	31.5	(2.6)	44.6	(6.1)	34.5	(3.9)	32.0	(2.3)	45.1	(5.4)	40.0	(3.7)
North Dakota	29.1	(3.0)	51.1	(7.0)	29.9	(4.2)	26.5	(2.4)	36.7	(5.1)	29.9	(3.8)
Ohio	34.7	(3.1)	51.9	(7.3)	39.9	(4.9)	39.1	(2.8)	60.1	(6.0)	43.8	(4.5)
Oklahoma	—	—	—	—	—	—	—	—	—	—	—	—
Oregon	—	—	—	—	—	—	—	—	—	—	—	—
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—
Rhode Island	47.1	(2.9)	63.2	(6.0)	55.7	(5.1)	46.3	(2.6)	59.5	(5.6)	56.2	(6.3)
South Carolina	30.0	(2.4)	37.9	(6.0)	34.1	(4.3)	29.4	(2.4)	44.7	(6.3)	36.5	(3.9)
South Dakota	—	—	—	—	—	—	28.8	(2.8)	43.2	(6.9)	31.0	(3.9)
Tennessee	37.0	(2.7)	50.1	(6.1)	40.5	(4.0)	38.9	(2.2)	57.3	(4.9)	48.7	(3.4)
Texas	—	—	—	—	—	—	30.0	(3.2)	36.7	(7.6)	35.7	(5.5)
Utah	16.5	(2.4)	17.9	(6.3)	18.6	(3.9)	23.0	(2.5)	31.1	(6.9)	28.2	(4.3)
Vermont	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	—	—	—	—	—	—	19.6	(2.4)	27.8	(6.5)	23.2	(4.1)
West Virginia	31.9	(2.8)	46.2	(6.1)	36.4	(3.8)	32.7	(2.6)	48.7	(5.5)	38.8	(3.9)
Wisconsin	27.2	(2.6)	37.7	(6.7)	30.5	(4.2)	24.0	(2.5)	34.7	(6.4)	28.5	(4.1)
Median	31.9		43.2		38.9		30.0		43.2		36.5	
Low	13.7		17.9		15.6		14.0		27.8		16.4	
High	47.1		70.5		55.7		46.3		60.1		56.2	

*Persons who report no exercise, recreation, or physical activities (other than regular job duties) during the previous month.

†Family income ≤\$20,000.

‡≥95% Confidence interval.

— Not available.

TABLE 2. Prevalence of no leisure-time physical activity* among selected adult demographic groups in participating states — Behavioral Risk Factor Surveillance System, 1986–1990 — Continued

1986			1989			1990		
≥18 years		Low income†	≥18 years		Low income	≥18 years		Low income
% (CI)‡	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)
31.3 (2.7)	45.7 (6.6)	40.0 (4.1)	35.4 (2.4)	45.6 (5.7)	39.0 (3.7)	33.6 (2.3)	43.6 (5.1)	39.3 (3.5)
24.2 (2.7)	28.3 (6.3)	35.0 (5.1)	24.0 (2.5)	26.8 (5.7)	30.8 (4.8)	20.7 (2.3)	23.4 (5.3)	25.7 (4.5)
22.3 (2.0)	29.1 (5.3)	31.9 (4.3)	25.4 (2.2)	31.5 (6.4)	32.8 (4.4)	24.4 (2.0)	30.0 (4.8)	34.9 (3.9)
—	—	—	—	—	—	19.4 (2.1)	30.4 (6.4)	26.0 (4.1)
33.5 (3.2)	53.2 (7.6)	53.7 (7.2)	32.3 (2.9)	42.7 (7.6)	38.9 (6.6)	25.5 (2.2)	36.8 (5.8)	38.8 (5.5)
—	—	—	—	—	—	27.4 (2.5)	39.3 (6.0)	39.8 (5.6)
48.1 (3.4)	71.2 (7.4)	59.2 (5.7)	49.3 (3.0)	63.8 (6.2)	59.4 (5.2)	51.9 (3.1)	62.1 (7.2)	61.1 (5.4)
26.1 (2.5)	30.6 (4.9)	32.3 (4.7)	25.7 (2.4)	29.7 (4.5)	33.9 (4.5)	32.1 (2.3)	39.2 (4.5)	42.3 (4.0)
32.2 (3.3)	53.7 (14.6)	41.8 (7.7)	36.7 (2.6)	53.6 (7.1)	45.5 (5.0)	37.0 (2.5)	51.2 (6.9)	45.8 (4.5)
25.8 (2.6)	36.0 (6.9)	32.7 (4.5)	28.0 (2.4)	32.6 (6.4)	32.3 (4.6)	31.6 (2.6)	28.9 (6.2)	33.3 (4.9)
24.7 (2.3)	33.4 (5.1)	28.9 (3.7)	30.6 (2.5)	43.2 (5.5)	36.3 (4.7)	27.8 (2.4)	40.8 (5.7)	31.4 (3.8)
27.4 (2.4)	40.7 (5.8)	29.5 (4.4)	32.5 (2.4)	42.3 (6.0)	35.4 (4.2)	32.0 (2.5)	44.6 (6.2)	34.0 (5.3)
31.4 (2.3)	48.8 (5.0)	39.6 (4.0)	31.3 (2.2)	47.8 (5.1)	40.8 (4.0)	27.4 (2.0)	35.6 (4.9)	34.0 (3.7)
31.0 (3.8)	45.7 (7.9)	37.2 (6.5)	34.1 (3.0)	43.7 (5.7)	43.2 (5.4)	33.8 (2.8)	46.4 (5.8)	42.1 (4.9)
40.0 (2.6)	55.0 (5.3)	47.9 (3.9)	39.1 (2.6)	54.3 (5.6)	49.8 (4.1)	41.8 (2.5)	55.3 (5.4)	51.1 (4.1)
—	—	—	—	—	—	28.7 (3.5)	44.3 (9.5)	36.9 (6.0)
35.0 (2.9)	44.9 (6.3)	43.8 (4.9)	42.2 (3.1)	60.0 (7.4)	51.4 (5.1)	36.3 (3.0)	53.4 (7.5)	46.1 (5.1)
32.9 (3.3)	51.1 (7.3)	48.6 (7.6)	32.2 (2.6)	49.2 (6.4)	41.0 (6.5)	30.4 (2.7)	43.5 (6.7)	43.7 (7.4)
28.6 (2.7)	48.5 (6.6)	40.5 (5.4)	25.7 (2.8)	47.3 (7.2)	40.5 (6.0)	23.3 (2.7)	36.3 (7.5)	31.5 (6.2)
27.5 (2.8)	42.8 (8.4)	35.9 (5.0)	29.7 (2.0)	44.2 (5.2)	39.1 (3.7)	32.4 (2.1)	46.6 (5.1)	43.1 (4.0)
25.9 (1.6)	37.2 (4.1)	31.7 (2.9)	31.0 (1.7)	44.5 (4.1)	39.0 (3.2)	24.9 (1.6)	36.4 (3.9)	32.6 (3.1)
—	—	—	—	—	—	39.2 (2.9)	50.7 (6.1)	44.6 (4.5)
30.7 (2.7)	45.5 (6.2)	37.2 (4.3)	31.6 (2.7)	45.5 (6.6)	40.6 (4.6)	32.6 (2.6)	38.8 (6.3)	39.9 (4.7)
14.2 (2.1)	30.7 (5.9)	19.4 (3.7)	16.2 (2.3)	28.8 (5.5)	19.8 (3.5)	18.0 (2.3)	33.4 (6.2)	26.5 (4.3)
37.4 (2.8)	47.0 (5.8)	39.6 (4.3)	33.3 (2.6)	48.6 (5.8)	40.2 (4.5)	24.9 (2.3)	36.9 (5.1)	31.7 (4.0)
28.8 (3.0)	42.2 (8.1)	35.7 (6.1)	25.4 (2.5)	35.5 (6.9)	35.7 (6.1)	19.6 (2.2)	28.9 (6.3)	30.0 (5.5)
27.0 (3.0)	43.4 (8.2)	29.4 (4.7)	31.2 (2.9)	40.8 (7.4)	40.1 (5.4)	28.0 (3.0)	37.2 (7.6)	31.9 (5.0)
33.5 (3.1)	53.2 (7.3)	39.9 (5.9)	33.8 (3.1)	48.1 (7.3)	40.9 (6.2)	32.6 (3.0)	40.6 (7.0)	45.3 (6.5)
38.5 (2.9)	52.0 (5.8)	51.1 (4.6)	38.2 (2.8)	46.6 (5.9)	47.4 (4.3)	40.4 (2.4)	50.6 (5.5)	47.1 (3.8)
25.9 (2.3)	36.7 (5.3)	26.5 (3.4)	27.4 (2.4)	42.8 (5.6)	30.4 (3.7)	26.9 (2.4)	43.7 (5.4)	31.0 (3.9)
33.2 (2.8)	46.4 (6.4)	37.7 (4.8)	34.4 (2.8)	51.6 (6.6)	41.1 (5.1)	33.2 (2.9)	46.3 (6.1)	38.1 (5.5)
30.7 (3.2)	40.5 (7.7)	36.8 (5.3)	39.9 (3.3)	53.9 (6.5)	44.0 (5.0)	41.1 (2.9)	47.3 (6.5)	50.6 (4.9)
—	—	—	17.3 (1.9)	26.0 (4.7)	22.1 (3.4)	21.5 (1.6)	28.8 (3.8)	26.2 (2.7)
—	—	—	27.5 (2.4)	46.9 (5.5)	34.5 (4.2)	27.0 (1.9)	40.1 (4.7)	35.7 (3.5)
38.4 (2.5)	57.7 (5.3)	43.0 (6.1)	34.3 (2.4)	58.7 (5.5)	47.3 (5.4)	26.2 (2.2)	37.7 (5.0)	31.7 (4.0)
37.9 (2.6)	46.2 (5.8)	43.5 (4.0)	41.8 (2.7)	58.7 (6.1)	51.0 (4.4)	33.7 (2.5)	47.3 (5.5)	44.7 (4.4)
28.8 (3.0)	39.6 (6.0)	31.2 (4.5)	28.2 (2.3)	42.1 (5.4)	30.7 (3.4)	29.0 (2.4)	40.2 (5.0)	36.0 (3.9)
42.8 (3.2)	57.4 (4.9)	50.9 (3.5)	41.8 (2.3)	57.3 (4.8)	51.4 (3.8)	38.5 (2.1)	52.1 (5.1)	48.7 (3.4)
33.5 (2.3)	42.4 (7.9)	41.0 (5.8)	27.3 (2.6)	40.0 (7.3)	37.0 (5.0)	28.7 (2.7)	38.0 (6.3)	40.3 (4.9)
25.0 (2.7)	32.7 (6.8)	30.7 (4.6)	22.1 (2.2)	33.0 (5.4)	25.8 (4.0)	23.2 (2.2)	31.6 (5.6)	27.0 (4.0)
—	—	—	—	—	—	24.9 (2.9)	38.0 (7.4)	36.9 (6.2)
—	—	—	30.1 (2.8)	53.7 (8.6)	37.9 (5.9)	26.1 (2.3)	41.3 (6.5)	38.8 (5.8)
20.7 (2.4)	30.6 (6.3)	26.6 (4.7)	21.5 (2.2)	28.8 (5.9)	31.1 (4.5)	19.9 (1.9)	27.9 (5.1)	24.5 (3.7)
37.7 (2.6)	51.1 (5.4)	46.8 (3.9)	42.5 (2.9)	61.9 (5.3)	47.3 (4.0)	39.5 (2.2)	55.3 (4.4)	48.8 (3.2)
24.2 (2.8)	35.9 (6.5)	28.8 (4.6)	28.4 (2.7)	40.9 (6.9)	33.4 (4.7)	24.6 (2.6)	36.0 (6.5)	29.0 (4.8)
30.7	44.9	37.2	31.3	45.0	39.1	28.7	40.1	36.9
14.2	28.3	19.4	16.2	26.0	19.8	18.0	23.4	24.5
48.1	71.2	59.2	49.3	63.8	59.4	51.9	62.1	61.1

*Persons who report no exercise, recreation, or physical activities (other than regular job duties) during the previous month.

†Family income <\$20,000.

‡±95% Confidence interval.

— Not available.

TABLE 3. Prevalence of sedentary lifestyle* among selected adult demographic groups in participating states — Behavioral Risk Factor Surveillance System, 1986–1990

State	1986						1987					
	≥18 years		≥65 years		Low income†		≥18 years		≥65 years		Low income	
	%	(CI)‡	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)
Alabama	60.9	(5.0)	61.7	(9.8)	65.2	(7.1)	59.0	(3.0)	61.1	(7.1)	65.4	(4.4)
Arizona	49.9	(3.1)	52.7	(7.7)	51.2	(5.5)	57.4	(3.1)	52.5	(7.1)	62.8	(5.4)
California	58.0	(2.9)	58.5	(6.9)	61.9	(4.7)	53.2	(2.7)	49.7	(6.5)	56.4	(4.7)
Colorado	—	—	—	—	—	—	—	—	—	—	—	—
Connecticut	—	—	—	—	—	—	—	—	—	—	—	—
Delaware	—	—	—	—	—	—	—	—	—	—	—	—
Dist. of Col.	55.9	(3.4)	66.7	(7.0)	60.0	(5.4)	63.5	(3.2)	81.9	(6.2)	70.0	(5.2)
Florida	62.5	(3.0)	60.9	(6.5)	68.7	(4.9)	59.0	(3.0)	62.4	(5.7)	62.6	(4.6)
Georgia	65.0	(3.1)	74.2	(6.0)	68.1	(5.2)	64.2	(3.0)	75.6	(6.0)	69.1	(5.2)
Hawaii	48.0	(3.4)	44.8	(8.0)	50.0	(5.6)	51.0	(3.0)	52.9	(8.1)	51.5	(5.2)
Idaho	51.8	(3.5)	53.2	(7.0)	51.5	(4.7)	55.1	(2.8)	64.2	(5.2)	59.3	(4.0)
Illinois	64.9	(3.0)	77.9	(6.1)	66.3	(4.7)	57.4	(2.7)	63.9	(5.6)	63.9	(4.3)
Indiana	59.4	(3.2)	68.0	(6.3)	64.0	(4.7)	59.8	(2.4)	67.0	(4.9)	63.7	(3.8)
Iowa	—	—	—	—	—	—	—	—	—	—	—	—
Kentucky	72.2	(3.0)	85.0	(4.8)	79.0	(3.9)	69.6	(2.6)	79.6	(4.4)	73.6	(3.3)
Louisiana	—	—	—	—	—	—	—	—	—	—	—	—
Maine	—	—	—	—	—	—	58.9	(3.2)	67.0	(6.3)	65.8	(4.5)
Maryland	—	—	—	—	—	—	60.2	(3.5)	69.3	(7.4)	67.2	(6.8)
Massachusetts	52.3	(3.4)	58.3	(7.4)	58.0	(5.5)	56.2	(2.9)	68.7	(6.1)	61.6	(5.2)
Michigan	—	—	—	—	—	—	—	—	—	—	—	—
Minnesota	54.6	(1.9)	60.9	(4.6)	58.0	(3.0)	56.6	(1.9)	64.0	(4.0)	60.7	(3.1)
Mississippi	—	—	—	—	—	—	—	—	—	—	—	—
Missouri	60.0	(3.7)	65.4	(7.8)	64.3	(5.4)	62.2	(3.0)	71.6	(6.0)	67.9	(4.3)
Montana	48.7	(3.4)	51.2	(6.5)	49.3	(5.1)	47.2	(3.3)	57.7	(6.3)	50.5	(4.8)
Nebraska	—	—	—	—	—	—	59.9	(3.2)	72.1	(5.8)	63.1	(4.7)
New Hampshire	—	—	—	—	—	—	56.7	(3.1)	67.1	(7.1)	65.3	(5.7)
New Mexico	53.5	(3.3)	62.9	(8.0)	59.1	(4.7)	57.0	(3.4)	66.3	(7.2)	62.3	(4.9)
New York	59.6	(3.3)	71.1	(7.2)	63.9	(5.9)	73.5	(2.9)	81.0	(5.8)	76.5	(4.9)
North Carolina	61.9	(2.7)	67.9	(5.7)	65.8	(3.9)	61.3	(2.7)	65.0	(5.0)	65.8	(3.9)
North Dakota	63.4	(3.1)	75.5	(5.7)	64.8	(4.5)	61.3	(2.6)	72.1	(5.1)	65.4	(3.9)
Ohio	58.1	(3.3)	67.8	(6.9)	61.9	(5.2)	67.1	(2.7)	77.0	(5.3)	68.8	(4.2)
Oklahoma	—	—	—	—	—	—	—	—	—	—	—	—
Oregon	—	—	—	—	—	—	—	—	—	—	—	—
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—
Rhode Island	65.6	(2.8)	79.1	(5.2)	71.6	(4.5)	68.7	(2.5)	75.8	(5.0)	74.1	(5.4)
South Carolina	66.5	(2.5)	—	—	—	—	60.5	(2.5)	70.8	(5.7)	64.3	(3.9)
South Dakota	—	—	—	—	—	—	58.0	(3.0)	64.7	(6.7)	59.8	(4.1)
Tennessee	65.5	(2.6)	71.2	(5.8)	69.0	(3.8)	66.5	(2.1)	75.7	(4.6)	71.9	(3.1)
Texas	—	—	—	—	—	—	56.0	(3.2)	54.3	(7.7)	60.6	(5.2)
Utah	49.1	(3.4)	55.7	(8.8)	51.9	(5.4)	49.9	(3.1)	51.0	(7.2)	53.2	(4.7)
Vermont	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	—	—	—	—	—	—	47.4	(3.1)	42.5	(7.1)	48.7	(4.9)
West Virginia	60.9	(2.9)	70.4	(5.2)	64.1	(4.0)	64.2	(2.7)	73.8	(5.0)	68.8	(4.0)
Wisconsin	54.9	(3.0)	61.7	(6.8)	57.7	(4.5)	53.9	(2.9)	62.5	(6.5)	55.5	(4.5)
Median	58.9		65.4		63.9		59.0		67.0		63.9	
Low	48.0		44.8		49.3		47.2		42.5		48.7	
High	72.7		85.0		79.0		73.5		81.9		76.5	

*Fewer than three 20-minute sessions of leisure-time physical activity per week.

†Family income ≤\$20,000.

‡±95% Confidence interval.

— Not available.

TABLE 3. Prevalence of sedentary lifestyle* among selected adult demographic groups in participating states — Behavioral Risk Factor Surveillance System, 1986–1990 — Continued

1988						1989						1990					
≥18 years			≥65 years			Low income†			≥18 years			≥65 years			Low income		
%	(CI)‡		%	(CI)		%	(CI)		%	(CI)		%	(CI)		%	(CI)	
57.8	(2.9)	60.6	(6.4)	61.4	(4.1)	59.2	(2.6)	64.0	(5.4)	62.3	(3.8)	60.3	(2.4)	66.2	(5.3)	65.7	(3.5)
52.9	(3.2)	48.3	(7.4)	62.2	(5.6)	49.1	(2.9)	49.0	(6.5)	54.0	(5.0)	51.4	(2.7)	47.4	(6.1)	52.3	(5.1)
48.8	(2.3)	51.1	(5.7)	56.8	(4.2)	52.1	(2.4)	52.1	(6.3)	57.8	(4.5)	53.7	(2.2)	54.1	(5.3)	62.1	(3.9)
—	—	—	—	—	—	—	—	—	—	—	—	44.5	(2.6)	46.8	(6.8)	48.7	(4.7)
57.6	(3.2)	69.3	(6.7)	72.6	(6.2)	56.9	(2.9)	58.2	(7.4)	63.3	(6.5)	52.0	(2.5)	58.9	(6.0)	62.8	(5.3)
—	—	—	—	—	—	—	—	—	—	—	—	54.1	(2.9)	63.6	(6.4)	63.0	(5.9)
66.7	(3.2)	84.1	(6.1)	72.5	(5.0)	74.7	(2.6)	84.2	(4.8)	81.5	(4.2)	73.3	(2.7)	76.2	(6.6)	78.5	(4.5)
52.6	(2.9)	51.4	(5.2)	59.7	(4.8)	51.6	(2.6)	51.4	(5.0)	58.1	(4.7)	54.8	(2.5)	55.1	(4.6)	64.4	(4.0)
61.7	(3.2)	83.3	(9.9)	68.5	(6.2)	63.6	(2.7)	72.4	(6.5)	68.7	(4.6)	62.3	(2.5)	67.2	(6.2)	66.6	(4.2)
53.3	(3.0)	54.3	(7.5)	58.0	(5.0)	53.8	(2.8)	46.0	(6.6)	60.4	(4.8)	62.4	(2.6)	58.0	(6.8)	62.1	(4.9)
51.0	(2.7)	56.8	(5.6)	56.4	(4.0)	57.6	(2.6)	63.3	(5.3)	62.8	(4.2)	58.7	(2.6)	63.9	(5.5)	62.2	(3.9)
57.8	(2.7)	65.5	(5.7)	58.5	(5.0)	61.5	(2.5)	66.3	(5.6)	62.7	(4.6)	60.3	(2.6)	69.2	(5.5)	60.8	(5.3)
60.2	(2.4)	70.1	(4.8)	65.5	(4.2)	61.5	(2.3)	71.1	(4.5)	65.1	(4.0)	61.3	(2.2)	67.6	(4.7)	69.7	(3.7)
58.3	(3.7)	68.4	(7.4)	64.8	(6.1)	63.0	(3.1)	71.8	(5.2)	68.2	(5.2)	60.6	(2.7)	66.9	(5.3)	67.3	(5.0)
67.0	(2.5)	73.7	(4.9)	71.2	(3.6)	69.0	(2.4)	76.7	(4.7)	76.5	(3.4)	69.1	(2.4)	78.2	(4.6)	74.4	(3.7)
—	—	—	—	—	—	—	—	—	—	—	—	58.5	(3.8)	65.1	(9.3)	64.1	(5.9)
58.5	(2.9)	66.0	(6.4)	64.5	(4.5)	63.7	(2.9)	79.3	(5.7)	71.5	(4.5)	59.8	(3.0)	70.1	(6.8)	70.4	(4.6)
64.4	(3.5)	74.6	(6.5)	72.0	(7.6)	61.8	(2.9)	74.2	(5.9)	67.2	(6.2)	61.6	(2.8)	71.2	(6.1)	65.2	(7.4)
52.9	(2.9)	66.2	(6.7)	64.2	(5.5)	54.6	(3.1)	70.1	(6.6)	64.5	(6.0)	49.8	(3.2)	60.1	(7.4)	55.0	(6.3)
—	—	—	—	—	—	60.4	(2.1)	66.9	(5.0)	66.1	(3.6)	59.3	(2.2)	69.6	(4.8)	67.4	(3.8)
53.5	(1.9)	62.0	(4.2)	60.9	(3.2)	58.7	(1.9)	67.4	(3.9)	65.3	(3.2)	55.3	(1.9)	59.6	(4.0)	60.6	(3.4)
—	—	—	—	—	—	—	—	—	—	—	—	66.4	(2.7)	77.6	(4.7)	69.7	(3.9)
59.0	(3.0)	68.7	(5.9)	64.3	(4.4)	62.3	(2.8)	70.2	(6.1)	72.0	(4.3)	61.2	(2.8)	64.2	(6.3)	65.1	(4.6)
46.4	(3.2)	57.0	(6.5)	51.1	(5.2)	49.8	(3.0)	57.7	(6.2)	51.4	(4.7)	52.0	(3.1)	59.0	(7.1)	59.3	(5.0)
60.5	(2.9)	71.0	(5.2)	64.3	(4.4)	61.3	(2.8)	76.2	(4.9)	69.0	(4.3)	55.4	(2.7)	62.7	(5.2)	61.6	(4.2)
55.4	(3.2)	64.7	(7.4)	64.3	(5.9)	44.7	(2.9)	53.4	(7.2)	48.2	(6.4)	46.9	(2.8)	55.9	(6.9)	54.5	(6.1)
51.2	(3.6)	63.8	(8.3)	52.5	(5.3)	56.3	(3.0)	62.5	(7.3)	64.0	(5.4)	51.0	(3.1)	55.0	(7.6)	56.3	(5.2)
73.6	(3.1)	84.0	(5.7)	81.8	(4.8)	73.1	(2.8)	79.8	(5.9)	71.0	(5.9)	63.2	(3.0)	71.3	(6.3)	69.3	(6.2)
63.7	(2.7)	73.3	(5.3)	71.9	(4.0)	62.8	(2.8)	68.7	(5.3)	69.4	(4.0)	60.7	(2.3)	68.9	(4.9)	67.4	(3.5)
57.5	(2.7)	68.0	(5.0)	58.9	(4.2)	55.6	(2.8)	66.3	(5.3)	60.9	(4.1)	56.4	(2.6)	65.3	(5.3)	61.0	(4.1)
63.1	(2.9)	69.6	(5.9)	69.9	(4.5)	63.4	(3.0)	76.0	(5.8)	68.5	(5.0)	69.3	(2.9)	76.8	(5.2)	70.7	(5.3)
59.7	(3.6)	71.5	(7.5)	64.1	(5.5)	71.2	(3.0)	78.7	(5.5)	73.4	(4.8)	66.3	(2.7)	67.5	(6.2)	73.1	(4.6)
—	—	—	—	—	—	46.5	(2.6)	45.2	(5.3)	50.4	(4.2)	48.9	(1.9)	52.8	(4.2)	53.0	(3.1)
—	—	—	—	—	—	57.2	(2.7)	68.5	(5.2)	61.5	(4.3)	54.9	(2.2)	63.1	(4.7)	60.5	(3.8)
64.8	(2.5)	78.8	(4.3)	67.7	(6.1)	58.7	(2.7)	72.3	(5.1)	67.1	(5.2)	64.7	(2.7)	60.6	(5.1)	58.5	(4.6)
65.4	(2.6)	70.6	(5.5)	70.0	(3.7)	68.2	(2.5)	76.2	(5.3)	71.3	(4.0)	69.7	(2.3)	78.3	(4.3)	75.9	(3.6)
56.8	(3.2)	65.1	(5.7)	59.1	(4.9)	54.1	(2.6)	64.5	(5.1)	56.9	(3.9)	56.9	(2.6)	62.0	(5.1)	62.7	(3.7)
67.3	(2.2)	73.5	(4.3)	72.7	(3.1)	64.3	(2.3)	68.9	(4.5)	71.2	(3.4)	61.0	(2.1)	65.1	(5.2)	67.8	(3.3)
59.7	(3.2)	64.6	(7.7)	65.5	(5.4)	53.0	(2.9)	58.3	(7.6)	58.8	(4.9)	53.5	(2.9)	57.0	(7.0)	62.4	(4.8)
50.3	(3.0)	56.9	(7.2)	58.8	(5.0)	49.1	(2.7)	51.9	(6.0)	54.0	(4.7)	48.8	(2.7)	48.1	(6.2)	52.4	(4.8)
—	—	—	—	—	—	—	—	—	—	—	—	51.0	(3.5)	55.8	(7.7)	56.4	(6.3)
—	—	—	—	—	—	57.7	(3.0)	72.9	(7.6)	64.3	(5.6)	59.1	(2.7)	70.4	(5.8)	65.9	(5.5)
45.2	(3.0)	53.1	(6.9)	50.8	(5.2)	49.9	(2.7)	53.4	(6.5)	55.5	(4.8)	51.9	(2.4)	56.6	(5.6)	55.1	(4.3)
66.0	(2.6)	72.3	(5.0)	72.3	(3.6)	66.2	(2.7)	78.4	(4.5)	69.1	(3.9)	67.8	(2.2)	78.1	(3.6)	73.2	(3.0)
54.4	(3.2)	62.7	(6.6)	58.3	(4.9)	57.7	(2.9)	62.1	(6.8)	60.2	(4.8)	53.6	(3.0)	55.6	(6.8)	57.6	(5.4)
58.0	—	67.1	—	64.3	—	58.7	—	67.9	—	64.4	—	58.5	—	63.9	—	62.8	—
45.2	—	48.3	—	50.8	—	44.7	—	45.2	—	48.2	—	44.5	—	46.8	—	48.7	—
73.6	—	84.1	—	81.8	—	74.7	—	84.2	—	81.5	—	73.3	—	78.3	—	78.5	—

*Fewer than three 20-minute sessions of leisure-time physical activity per week.

†Family income ≤\$20,000.

‡±95% Confidence interval.

— Not available.

TABLE 4. Smoking* prevalence among selected adult demographic groups—Surveillance System, 1986–1990

State	1986				1987				≥18 years
	≥18 years		Low education [†]		≥18 years		Low education		
	%	(CI) [§]	%	(CI)	%	(CI)	%	(CI)	
Alabama	24.6	(4.1)	29.2	(5.6)	27.2	(3.0)	30.5	(3.9)	26.3
Arizona	24.4	(2.8)	28.0	(4.3)	26.2	(2.9)	28.6	(4.4)	23.3
California	24.5	(2.4)	29.5	(3.8)	21.3	(2.2)	25.7	(3.5)	22.2
Colorado	—	—	—	—	—	—	—	—	—
Connecticut	—	—	—	—	—	—	—	—	26.3
Delaware	—	—	—	—	—	—	—	—	—
Dist. of Col.	26.6	(3.1)	34.4	(4.8)	24.2	(2.9)	30.3	(5.1)	20.3
Florida	27.9	(2.8)	29.6	(4.0)	28.0	(3.0)	29.1	(4.3)	23.3
Georgia	27.2	(2.9)	30.4	(4.1)	25.0	(2.6)	28.5	(3.6)	25.3
Hawaii	24.4	(2.9)	29.7	(4.4)	22.5	(2.5)	26.6	(3.8)	23.3
Idaho	23.4	(2.6)	27.6	(4.1)	20.5	(2.2)	26.3	(3.3)	23.3
Illinois	27.8	(2.8)	31.1	(4.1)	25.8	(2.3)	29.7	(3.4)	26.3
Indiana	27.2	(3.0)	31.9	(4.1)	28.7	(2.1)	33.1	(2.8)	27.3
Iowa	—	—	—	—	—	—	—	—	22.2
Kentucky	34.7	(3.2)	38.1	(3.7)	32.3	(2.5)	37.3	(3.2)	34.3
Louisiana	—	—	—	—	—	—	—	—	—
Maine	—	—	—	—	27.7	(2.7)	32.0	(3.6)	26.3
Maryland	—	—	—	—	24.8	(3.0)	32.6	(4.5)	25.3
Massachusetts	27.0	(3.0)	34.5	(4.8)	26.4	(2.6)	32.7	(4.3)	26.3
Michigan	—	—	—	—	—	—	—	—	26.3
Minnesota	25.1	(1.7)	30.7	(2.6)	24.3	(1.6)	29.0	(2.5)	22.2
Mississippi	—	—	—	—	—	—	—	—	—
Missouri	25.7	(3.3)	29.1	(4.3)	29.2	(2.7)	33.0	(3.7)	26.3
Montana	23.0	(2.7)	28.2	(4.1)	22.3	(2.6)	24.3	(3.7)	19.3
Nebraska	—	—	—	—	24.0	(2.8)	28.1	(4.0)	20.3
New Hampshire	—	—	—	—	26.6	(2.6)	32.1	(4.5)	28.3
New Mexico	26.1	(2.8)	30.9	(4.1)	20.9	(2.6)	24.6	(3.7)	23.3
New York	27.0	(3.0)	30.6	(4.2)	23.2	(2.8)	27.1	(4.0)	23.3
North Carolina	26.5	(2.4)	30.0	(3.4)	26.1	(2.5)	31.7	(3.3)	26.3
North Dakota	26.0	(2.9)	29.1	(4.3)	23.7	(2.3)	26.0	(3.5)	22.2
Ohio	28.0	(2.8)	34.3	(4.0)	26.8	(2.5)	30.9	(3.4)	26.3

Demographic groups in participating states — Behavioral Risk Factor

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1988				1989				1990			
≥18 years		Low education		≥18 years		Low education		≥18 years		Low education	
%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)
26.2	(2.5)	28.6	(3.2)	21.9	(2.1)	25.5	(3.0)	22.4	(1.9)	25.4	(2.8)
23.5	(2.6)	28.7	(4.1)	25.2	(2.6)	31.4	(4.6)	20.7	(2.3)	22.2	(3.7)
22.2	(1.9)	30.0	(3.5)	21.4	(1.9)	24.9	(3.0)	19.7	(1.7)	25.0	(2.9)
—	—	—	—	—	—	—	—	21.3	(2.2)	26.9	(3.8)
26.7	(2.9)	30.2	(4.3)	26.6	(2.6)	32.4	(4.2)	22.2	(2.0)	27.9	(3.3)
—	—	—	—	—	—	—	—	23.3	(2.4)	28.3	(3.6)
20.0	(2.6)	22.2	(4.2)	21.9	(2.6)	26.1	(4.0)	19.4	(2.4)	21.4	(3.6)
23.9	(2.3)	27.2	(3.3)	24.6	(2.3)	27.6	(3.4)	23.6	(2.0)	25.0	(2.8)
25.1	(2.9)	34.1	(5.4)	23.2	(2.3)	27.6	(3.5)	24.0	(2.2)	30.5	(3.5)
23.6	(2.5)	27.5	(3.8)	21.8	(2.2)	25.5	(3.4)	21.1	(2.2)	27.4	(3.5)
20.1	(2.1)	23.5	(3.1)	19.2	(2.0)	25.5	(3.3)	20.4	(2.1)	25.9	(3.2)
26.8	(2.4)	30.2	(3.8)	25.6	(2.2)	30.4	(3.5)	24.2	(2.4)	32.2	(4.0)
27.3	(2.1)	31.5	(2.9)	27.0	(2.0)	32.1	(2.8)	26.6	(1.9)	31.9	(2.7)
22.3	(3.2)	24.8	(4.3)	22.7	(2.6)	27.3	(3.8)	21.7	(2.3)	28.6	(3.4)
34.2	(2.5)	38.2	(3.3)	30.4	(2.6)	34.0	(3.4)	29.1	(2.4)	32.9	(3.2)
—	—	—	—	—	—	—	—	24.9	(3.7)	31.8	(5.1)
26.4	(2.7)	31.8	(3.6)	27.2	(2.5)	33.5	(3.7)	26.9	(2.8)	32.5	(3.9)
25.1	(3.1)	34.6	(4.8)	22.0	(2.3)	28.2	(3.8)	22.0	(2.3)	29.6	(3.8)
26.4	(2.8)	35.5	(4.2)	23.6	(2.7)	31.0	(4.4)	23.5	(2.6)	30.8	(4.3)
26.2	(2.8)	33.2	(4.1)	27.5	(2.0)	31.3	(3.0)	29.1	(2.0)	34.3	(2.9)
22.5	(1.5)	27.4	(2.4)	21.0	(1.5)	27.1	(2.5)	21.4	(1.5)	27.2	(2.5)
—	—	—	—	—	—	—	—	24.1	(2.6)	28.7	(3.5)
26.0	(2.6)	28.5	(3.7)	25.9	(2.5)	30.1	(3.7)	26.2	(2.6)	30.2	(3.5)
19.7	(2.4)	23.9	(3.7)	19.4	(2.4)	25.9	(3.8)	19.4	(2.4)	24.0	(3.9)
20.9	(2.4)	23.9	(3.6)	22.3	(2.3)	27.7	(3.5)	22.7	(2.3)	27.3	(3.5)
28.0	(3.2)	35.7	(4.7)	24.8	(2.6)	30.5	(3.9)	22.0	(2.3)	28.7	(3.7)
23.8	(3.0)	25.8	(4.2)	22.1	(2.6)	26.8	(4.0)	22.3	(2.7)	27.8	(4.3)
23.9	(2.9)	25.0	(4.1)	23.4	(2.8)	26.9	(4.3)	22.5	(2.7)	26.4	(4.3)
26.2	(2.4)	32.0	(3.3)	26.5	(2.5)	31.1	(3.4)	28.0	(2.2)	30.4	(2.9)
22.1	(2.2)	25.9	(3.3)	20.4	(2.1)	24.9	(3.2)	20.3	(2.1)	23.9	(3.1)
26.2	(2.6)	29.9	(3.6)	26.6	(2.8)	33.0	(3.8)	26.1	(2.7)	30.1	(3.8)

Oklahoma	—	—	—	—	24.2	(3.1)
Oregon	—	—	—	—	—	—
Pennsylvania	—	—	—	—	—	—
Rhode Island	30.2	(2.5)	33.0	(3.5)	24.3	(2.2)
South Carolina	26.5	(2.4)	29.7	(3.3)	25.3	(2.2)
South Dakota	—	—	—	25.2	(2.6)	30.6
Tennessee	28.0	(2.4)	32.0	(3.2)	27.7	(2.0)
Texas	—	—	—	23.0	(2.7)	25.8
Utah	18.2	(2.5)	29.3	(4.8)	15.0	(2.1)
Vermont	—	—	—	—	22.3	(3.8)
Virginia	—	—	—	—	—	—
Washington	—	—	—	23.7	(2.7)	27.3
West Virginia	29.1	(2.8)	33.1	(3.6)	28.8	(2.5)
Wisconsin	26.0	(2.6)	28.4	(5.3)	26.0	(2.5)
Median	26.5		30.2		25.2	
Low	18.2		27.6		15.0	
High	34.7		38.1		32.3	

*Persons who have ever smoked 100 cigarettes and currently smoke regularly.

[†]High school education or less.

[‡]±95% Confidence interval.

— Not available.

4.2	(3.0)	29.1	(4.5)	26.7	(2.9)	31.6	(4.4)	26.6	(2.6)	31.2	(3.9)
-		-		23.4	(2.3)	28.8	(3.6)	21.9	(1.6)	26.3	(2.4)
-		-		27.0	(2.3)	32.0	(3.1)	23.6	(1.9)	29.0	(2.6)
4.3	(2.3)	27.5	(3.0)	26.1	(2.3)	30.9	(3.2)	25.7	(2.3)	31.3	(3.3)
5.6	(2.4)	29.5	(3.2)	24.2	(2.2)	28.1	(3.0)	24.9	(2.2)	28.1	(3.0)
1.1	(2.5)	23.4	(3.6)	21.8	(2.0)	24.8	(2.9)	20.7	(2.1)	22.6	(3.0)
9.8	(2.1)	34.1	(2.9)	27.0	(2.0)	30.3	(2.7)	26.7	(1.9)	31.3	(2.6)
3.7	(2.7)	25.5	(3.8)	21.8	(2.4)	25.4	(3.6)	22.9	(2.5)	27.0	(3.8)
4.7	(2.2)	23.2	(3.9)	16.4	(2.2)	24.1	(3.8)	16.8	(2.0)	25.6	(3.7)
-		-		-		-		21.6	(2.8)	28.9	(4.6)
-		-		25.0	(2.6)	31.4	(4.2)	22.6	(2.2)	30.6	(3.7)
4.6	(2.6)	28.6	(4.0)	24.2	(2.3)	32.6	(3.9)	22.3	(2.0)	29.2	(3.3)
5.7	(2.4)	30.3	(3.1)	27.6	(2.6)	29.9	(3.2)	26.6	(2.0)	30.8	(2.6)
4.3	(2.7)	29.9	(3.8)	26.0	(2.6)	31.5	(3.8)	24.7	(2.6)	29.8	(3.8)
4.3		28.6		24.2		29.4		22.7		28.7	
4.7		22.2		16.4		24.1		16.8		21.4	
4.2		38.2		30.4		34.0		29.1		34.3	

regularly.

**TABLE 5. Prevalence of overweight* among selected adult d
Factor Surveillance System, 1987-1990**

State	1987				1988			
	≥18 years		Low-income women†		≥18 years		Low w	
	%	(CI)§	%	(CI)	%	(CI)	%	
Alabama	22.0	(2.7)	25.9	(4.7)	22.5	(2.4)	28.6	
Arizona	16.5	(2.3)	20.3	(5.3)	20.0	(2.6)	27.1	
California	18.1	(2.0)	17.5	(4.2)	20.9	(1.9)	25.5	
Colorado	—	—	—	—	—	—	—	
Connecticut	—	—	—	—	19.7	(2.5)	32.5	
Delaware	—	—	—	—	—	—	—	
Dist. of Col.	22.0	(2.7)	34.9	(7.2)	23.0	(2.8)	38.8	
Florida	18.6	(2.5)	17.6	(4.7)	22.3	(2.3)	25.9	
Georgia	20.1	(2.5)	23.2	(5.4)	18.8	(3.1)	22.3	
Hawaii	15.1	(2.2)	14.8	(4.3)	16.4	(2.2)	19.2	
Idaho	19.8	(2.2)	21.1	(3.8)	17.8	(2.0)	18.4	
Illionis	21.3	(2.1)	27.2	(4.6)	22.7	(2.2)	25.6	
Indiana	25.2	(2.0)	29.7	(4.2)	24.1	(2.1)	27.0	
Iowa	—	—	—	—	20.1	(3.1)	21.3	
Kentucky	21.8	(2.2)	25.5	(3.9)	23.0	(2.2)	26.4	
Louisiana	—	—	—	—	—	—	—	
Maine	22.4	(2.6)	26.5	(4.9)	21.5	(2.5)	23.7	
Maryland	19.3	(2.8)	35.4	(8.2)	18.8	(2.7)	25.4	
Massachusetts	19.2	(2.3)	22.2	(5.1)	21.4	(2.5)	25.0	
Michigan	—	—	—	—	24.0	(2.6)	28.2	
Minnesota	20.4	(1.5)	22.6	(3.2)	20.9	(1.5)	23.5	
Mississippi	—	—	—	—	—	—	—	
Missouri	22.3	(2.5)	27.2	(5.2)	23.0	(2.4)	27.7	
Montana	16.4	(2.2)	17.9	(4.2)	15.6	(2.3)	14.3	
Nebraska	20.7	(2.5)	22.8	(4.5)	22.5	(2.4)	24.2	
New Hampshire	17.6	(2.6)	23.0	(6.1)	19.5	(2.4)	20.3	
New Mexico	14.7	(2.4)	16.3	(4.8)	14.8	(2.3)	17.9	
New York	19.3	(2.7)	28.1	(6.3)	20.8	(2.7)	25.6	
North Carolina	19.6	(2.1)	25.4	(4.1)	20.6	(2.2)	25.5	
North Dakota	22.1	(2.2)	23.6	(4.0)	23.3	(2.3)	22.7	
Ohio	24.3	(2.4)	28.9	(4.8)	21.9	(2.4)	24.6	

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1988		1989				1990			
Low-income women		≥ 18 years		Low-income women		≥ 18 years		Low-income women	
%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)
28.6	(4.7)	19.6	(2.0)	23.2	(4.2)	24.0	(2.0)	32.0	(4.2)
27.1	(6.2)	19.2	(2.3)	18.9	(4.5)	20.8	(2.4)	24.8	(6.0)
25.5	(4.8)	17.5	(1.8)	18.8	(4.6)	20.9	(1.7)	24.5	(4.4)
—	—	—	—	—	—	16.3	(1.9)	23.1	(5.0)
32.5	(7.8)	18.4	(2.5)	21.0	(5.9)	22.7	(2.1)	33.7	(6.5)
—	—	—	—	—	—	25.5	(2.5)	31.8	(6.4)
38.8	(7.2)	23.7	(2.4)	29.0	(5.6)	27.4	(2.7)	37.5	(6.6)
25.9	(5.2)	21.4	(2.1)	25.1	(5.1)	24.2	(2.1)	34.6	(4.9)
22.3	(9.6)	19.2	(2.2)	23.5	(4.6)	20.3	(2.1)	30.7	(4.8)
19.2	(4.9)	17.0	(2.3)	17.6	(5.0)	17.7	(2.1)	19.0	(5.2)
18.4	(3.6)	17.3	(1.9)	24.6	(4.4)	21.6	(2.1)	26.0	(4.6)
25.6	(5.4)	23.2	(2.2)	27.5	(5.1)	20.8	(2.2)	26.6	(5.7)
27.0	(4.3)	23.9	(1.9)	31.4	(4.7)	26.0	(1.9)	26.2	(4.2)
21.3	(6.1)	25.3	(2.6)	29.8	(6.3)	24.6	(2.4)	26.4	(5.1)
26.4	(4.3)	22.6	(2.2)	28.2	(4.5)	23.4	(2.2)	31.7	(4.7)
—	—	—	—	—	—	24.2	(3.4)	24.3	(7.0)
23.7	(5.1)	20.5	(2.4)	21.3	(5.4)	23.6	(2.6)	29.8	(5.8)
25.4	(7.6)	19.0	(2.1)	25.1	(6.5)	23.0	(2.5)	31.4	(7.3)
25.0	(5.7)	20.1	(2.5)	23.1	(6.3)	18.9	(2.4)	21.0	(5.8)
28.2	(5.4)	24.7	(1.9)	31.5	(4.5)	26.4	(1.9)	31.6	(4.5)
23.5	(3.3)	21.4	(1.5)	23.4	(3.4)	21.1	(1.5)	21.3	(3.4)
—	—	—	—	—	—	26.3	(2.5)	30.4	(4.5)
27.7	(4.9)	19.4	(2.1)	24.5	(4.8)	22.9	(2.4)	28.7	(5.1)
14.3	(4.3)	18.4	(2.4)	21.5	(4.9)	20.3	(2.6)	18.4	(4.4)
24.2	(4.7)	21.8	(2.3)	23.6	(4.9)	23.5	(2.3)	26.7	(4.7)
20.3	(5.9)	18.8	(2.2)	20.8	(6.2)	21.4	(2.3)	24.9	(6.2)
17.9	(4.8)	15.5	(2.5)	20.1	(6.2)	21.6	(2.6)	25.4	(6.1)
25.6	(6.3)	17.6	(2.4)	21.3	(5.9)	20.1	(2.4)	22.9	(5.9)
25.5	(4.7)	21.1	(2.2)	23.2	(4.1)	24.3	(2.0)	31.2	(4.3)
22.7	(4.3)	23.0	(2.2)	24.6	(4.1)	22.7	(2.4)	22.0	(4.3)
24.6	(4.6)	21.4	(2.5)	30.9	(5.5)	22.6	(2.7)	27.5	(6.1)

Oklahoma	—	—		18.0	(2.7)	20.3	
Oregon	—	—		—		—	
Pennsylvania	—	—		—		—	
Rhode Island	17.6	(2.0)	24.4	(6.6)	18.2	(2.0)	17.2
South Carolina	20.7	(2.0)	23.1	(4.4)	21.5	(2.1)	27.3
South Dakota	22.4	(2.6)	22.7	(4.4)	22.9	(2.7)	24.6
Tennessee	21.4	(1.8)	22.8	(3.6)	20.1	(1.7)	26.7
Texas	22.0	(2.8)	24.7	(6.4)	18.6	(2.7)	21.3
Utah	16.1	(2.2)	18.0	(4.4)	18.2	(2.4)	17.5
Vermont	—	—		—		—	
Virginia	—	—		—		—	
Washington	20.8	(2.5)	27.5	(5.5)	20.4	(2.4)	24.9
West Virginia	24.6	(2.4)	25.2	(4.4)	24.4	(2.4)	24.0
Wisconsin	25.6	(2.6)	29.4	(5.5)	24.6	(2.9)	29.3
Median	20.7		23.6		20.9		24.9
Low	14.7		14.8		14.8		14.3
High	25.6		35.4		24.6		38.8

*Body mass index ≥ 27.8 for males and ≥ 27.3 for females.

[†]Family income $\leq \$20,000$.

[‡] $\pm 95\%$ Confidence interval.

—Not available.

20.3	(5.1)	20.3	(2.7)	24.0	(5.8)	23.0	(2.4)	32.6	(5.8)
—		21.0	(2.1)	27.5	(4.6)	21.6	(1.5)	23.2	(3.1)
—		26.5	(2.3)	34.7	(5.2)	24.6	(1.8)	30.4	(4.4)
17.2	(5.7)	19.0	(2.2)	22.6	(5.6)	22.3	(2.1)	27.4	(5.1)
27.3	(4.3)	20.6	(2.1)	22.1	(4.1)	25.1	(2.1)	31.3	(4.5)
24.6	(5.2)	21.4	(2.0)	22.4	(3.8)	22.6	(2.1)	25.7	(4.2)
26.7	(3.5)	20.0	(1.7)	23.2	(3.8)	23.5	(1.8)	30.2	(3.7)
21.3	(6.0)	18.2	(2.2)	21.6	(5.3)	22.0	(2.5)	27.4	(5.6)
17.5	(5.0)	16.6	(1.8)	16.7	(3.6)	19.4	(2.1)	25.7	(5.0)
—		—		—		20.1	(2.6)	24.3	(6.5)
—		21.9	(2.6)	28.5	(6.5)	19.5	(2.1)	25.8	(5.8)
24.9	(5.5)	20.0	(2.1)	28.1	(5.2)	19.0	(1.8)	22.7	(4.4)
24.0	(3.7)	23.6	(2.3)	30.8	(4.7)	24.8	(2.0)	27.8	(3.5)
29.3	(6.5)	22.8	(2.5)	27.3	(5.6)	23.3	(2.5)	23.1	(5.4)
24.9		20.4		23.6		22.7		26.6	
14.3		15.5		16.7		16.3		18.4	
38.8		26.5		34.7		27.4		37.5	

**TABLE 6. Prevalence of binge drinking* among selected adult de
Factor Surveillance System, 1986-1990**

State	1986				1987				≥18 %
	≥18 years		Men 18-34		≥18 years		Men 18-34		
	%	(CI) [†]	%	(CI)	%	(CI)	%	(CI)	
Alabama	9.2	(3.3)	25.5	(10.4)	12.5	(2.3)	33.2	(8.0)	10.7
Arizona	16.3	(2.5)	38.3	(7.4)	17.6	(2.6)	44.5	(7.9)	16.6
California	16.4	(2.1)	35.6	(6.0)	17.8	(2.1)	41.3	(6.5)	15.8
Colorado	—	—	—	—	—	—	—	—	—
Connecticut	—	—	—	—	—	—	—	—	17.3
Delaware	—	—	—	—	—	—	—	—	—
Dist. of Col.	13.7	(2.5)	26.9	(7.1)	9.0	(2.0)	21.1	(7.2)	7.1
Florida	16.4	(2.6)	42.7	(8.4)	15.3	(2.4)	33.2	(7.9)	13.6
Georgia	10.6	(2.1)	22.8	(6.6)	10.6	(2.0)	29.2	(7.2)	16.5
Hawaii	19.9	(2.8)	46.0	(7.4)	23.3	(2.6)	48.1	(6.7)	19.6
Idaho	17.5	(2.6)	43.4	(8.2)	15.3	(2.1)	32.0	(6.0)	14.0
Illinois	18.5	(2.8)	43.9	(8.5)	14.1	(2.0)	37.1	(6.7)	18.0
Indiana	17.4	(2.5)	42.5	(7.7)	13.2	(1.7)	32.9	(5.8)	15.3
Iowa	—	—	—	—	—	—	—	—	15.3
Kentucky	10.8	(2.3)	32.8	(8.3)	8.1	(1.5)	18.7	(5.2)	8.3
Louisiana	—	—	—	—	—	—	—	—	—
Maine	—	—	—	—	13.6	(2.1)	32.0	(7.9)	14.7
Maryland	—	—	—	—	14.1	(2.7)	27.6	(8.1)	8.9
Massachusetts	22.4	(3.0)	46.9	(8.8)	20.6	(2.4)	43.7	(7.0)	18.4
Michigan	—	—	—	—	—	—	—	—	23.3
Minnesota	23.2	(1.7)	50.7	(4.6)	22.2	(1.7)	47.1	(4.6)	22.6
Mississippi	—	—	—	—	—	—	—	—	—
Missouri	17.5	(3.2)	44.2	(9.6)	17.9	(2.3)	40.2	(7.1)	15.2
Montana	22.1	(3.1)	44.9	(9.4)	22.6	(3.0)	42.9	(8.8)	21.0
Nebraska	—	—	—	—	19.4	(2.8)	48.6	(8.3)	17.0
New Hampshire	—	—	—	—	20.2	(2.6)	49.4	(7.9)	17.6
New Mexico	11.8	(2.2)	25.7	(6.7)	6.6	(1.7)	16.4	(5.9)	13.3
New York	15.0	(2.5)	32.9	(8.3)	13.2	(2.4)	32.8	(8.0)	13.5
North Carolina	11.7	(2.0)	30.1	(6.6)	11.5	(2.0)	28.9	(6.7)	11.8
North Dakota	22.9	(3.1)	46.9	(8.0)	22.5	(2.3)	47.6	(6.3)	21.7
Ohio	19.4	(2.7)	43.2	(7.6)	17.0	(2.1)	41.0	(6.7)	17.0

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1988				1989				1990			
≥18 years		Men 18-34		≥18 years		Men 18-34		≥18 years		Men 18-34	
%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)
10.7	(2.0)	27.5	(6.7)	8.9	(1.6)	23.3	(5.6)	10.0	(1.4)	27.0	(5.1)
16.6	(2.4)	43.2	(7.6)	18.3	(2.3)	41.8	(6.9)	14.4	(2.1)	33.3	(6.8)
15.8	(1.7)	36.1	(5.3)	17.0	(1.8)	37.4	(5.4)	17.3	(1.6)	37.0	(4.9)
—	—	—	—	—	—	—	—	17.2	(2.1)	36.7	(6.0)
17.3	(2.6)	39.1	(8.2)	17.6	(2.5)	47.4	(7.7)	16.5	(1.9)	35.3	(6.0)
—	—	—	—	—	—	—	—	15.2	(2.1)	41.0	(7.0)
7.1	(1.7)	16.5	(5.7)	6.7	(1.4)	13.9	(4.6)	5.5	(1.3)	13.8	(4.7)
13.6	(2.0)	35.7	(7.1)	15.4	(2.0)	39.8	(7.6)	13.2	(1.6)	35.2	(6.4)
16.5	(2.3)	34.3	(5.7)	9.9	(1.9)	23.0	(6.3)	8.8	(1.6)	22.7	(5.2)
19.6	(2.4)	34.2	(6.5)	19.7	(2.3)	38.7	(6.3)	19.4	(2.2)	42.8	(6.3)
14.0	(2.2)	30.3	(6.9)	11.5	(2.0)	29.1	(6.4)	9.8	(1.7)	23.0	(5.7)
18.0	(2.2)	36.3	(6.4)	15.1	(2.0)	35.9	(6.4)	16.3	(2.2)	33.3	(6.1)
15.3	(1.9)	37.1	(6.5)	14.0	(1.8)	32.2	(6.1)	12.8	(1.6)	34.2	(5.5)
15.3	(3.2)	34.2	(9.4)	16.6	(2.7)	40.0	(8.4)	13.3	(2.0)	30.8	(6.8)
8.3	(1.5)	20.7	(5.5)	10.0	(1.8)	25.6	(6.1)	9.5	(1.7)	31.0	(6.3)
—	—	—	—	—	—	—	—	15.6	(2.9)	26.9	(8.2)
14.7	(2.3)	43.9	(7.9)	13.9	(2.2)	32.9	(7.0)	10.3	(1.9)	26.9	(7.1)
8.9	(2.2)	16.0	(6.8)	6.9	(1.6)	18.9	(5.9)	7.9	(1.5)	21.6	(5.9)
18.4	(2.5)	43.2	(7.2)	21.0	(2.7)	51.3	(8.4)	18.3	(2.5)	47.3	(7.5)
23.3	(2.7)	50.4	(7.2)	18.7	(1.8)	39.5	(5.4)	17.7	(1.8)	41.3	(5.9)
22.6	(1.7)	50.9	(4.6)	20.4	(1.5)	43.1	(4.6)	21.0	(1.6)	46.0	(4.4)
—	—	—	—	—	—	—	—	10.6	(2.1)	30.8	(7.8)
15.2	(2.2)	36.5	(6.9)	13.7	(2.0)	34.2	(6.3)	15.5	(2.1)	39.6	(7.2)
21.0	(2.9)	45.8	(8.5)	18.4	(2.5)	41.3	(8.7)	18.8	(2.5)	40.6	(8.3)
17.0	(2.5)	42.3	(7.7)	16.4	(2.2)	42.1	(7.4)	17.1	(2.2)	46.2	(7.1)
17.6	(2.5)	43.7	(7.2)	17.7	(2.4)	46.6	(7.5)	15.7	(2.0)	37.3	(6.5)
13.3	(2.4)	27.9	(7.9)	15.4	(2.4)	35.0	(7.3)	15.2	(2.4)	40.2	(7.8)
13.5	(2.5)	33.0	(8.3)	8.7	(2.0)	17.9	(6.8)	11.8	(1.9)	30.0	(7.0)
11.8	(1.9)	31.9	(6.6)	9.5	(1.7)	25.2	(5.8)	9.1	(1.4)	27.2	(5.4)
21.7	(3.2)	47.8	(6.6)	19.7	(2.3)	46.4	(6.8)	17.2	(2.2)	38.1	(6.8)
17.0	(2.4)	40.1	(7.0)	16.2	(2.5)	32.3	(7.4)	9.3	(1.8)	23.3	(7.0)

Oklahoma	—	—	—	—
Oregon	—	—	—	—
Pennsylvania	—	—	—	—
Rhode Island	14.2 (2.0)	36.0 (6.4)	7.7 (1.5)	18.3 (5.0)
South Carolina	7.2 (1.4)	—	11.9 (1.7)	27.9 (5.5)
South Dakota	—	—	20.4 (2.7)	50.7 (7.9)
Tennessee	9.2 (1.8)	24.8 (6.0)	10.2 (1.4)	30.0 (5.1)
Texas	—	—	21.9 (2.7)	52.6 (7.3)
Utah	12.7 (2.2)	29.2 (6.4)	11.0 (2.0)	24.4 (5.9)
Vermont	—	—	—	—
Virginia	—	—	—	—
Washington	—	—	17.3 (2.4)	38.4 (7.3)
West Virginia	12.5 (2.2)	35.3 (7.7)	13.2 (2.2)	39.2 (8.0)
Wisconsin	28.7 (2.8)	59.6 (6.7)	29.4 (2.7)	57.6 (6.7)
Median	16.4	38.3	15.3	37.1
Low	9.2	22.8	6.6	16.4
High	28.7	59.6	29.4	57.6

*Persons reporting consumption of five or more alcoholic drinks on

[†] ± 95% Confidence interval.

— Not available.

	10.4	(2.1)	27.0	(7.6)	9.6	(2.0)	25.7	(6.9)	10.7	(1.9)	22.8	(6.5)
	—		—		15.4	(2.0)	36.5	(7.2)	12.0	(1.3)	26.9	(4.6)
	—		—		20.2	(2.1)	45.9	(6.8)	18.1	(1.7)	45.1	(5.6)
5.0)	8.2	(1.6)	23.1	(5.4)	15.0	(2.0)	36.8	(6.5)	17.9	(2.0)	45.0	(6.6)
5.5)	9.8	(1.6)	21.8	(5.3)	10.9	(1.8)	22.1	(5.3)	10.2	(1.7)	28.1	(5.8)
7.9)	19.3	(2.8)	53.4	(7.8)	17.8	(2.0)	39.4	(6.3)	15.8	(2.0)	39.0	(6.5)
5.1)	9.0	(1.4)	27.7	(5.0)	6.7	(1.2)	21.4	(4.9)	6.3	(1.1)	17.0	(4.0)
7.3)	16.9	(2.6)	37.9	(8.0)	18.5	(2.3)	38.7	(6.8)	18.8	(2.4)	40.9	(6.8)
5.9)	7.3	(1.5)	24.3	(5.4)	11.9	(1.9)	24.0	(5.3)	10.5	(1.7)	25.0	(5.7)
	—		—		—		—		21.1	(3.1)	47.8	(9.0)
	—		—		16.8	(2.4)	39.7	(7.3)	16.1	(2.0)	41.0	(6.5)
7.3)	18.3	(2.5)	43.6	(7.7)	16.2	(2.1)	34.3	(6.8)	17.7	(1.9)	38.7	(6.3)
8.0)	9.1	(1.9)	26.8	(6.8)	10.5	(2.0)	29.0	(6.7)	9.4	(1.5)	28.4	(5.8)
6.7)	29.9	(2.7)	61.6	(7.0)	26.7	(2.6)	56.5	(6.6)	26.8	(2.7)	61.1	(6.9)
	15.3		36.1		15.4		36.2		15.2		35.2	
	7.1		16.0		6.7		13.9		5.5		13.8	
	29.9		61.6		26.7		56.5		26.8		61.1	

anks on one or more occasions during the past month.

TABLE 7. Prevalence of drinking and driving* among selected Risk Factor Surveillance System, 1986-1990

State	1986				1987			
	≥ 18 years		Men 18-34		≥ 18 years		Men 18-34	
	%	(CI) [†]	%	(CI)	%	(CI)	%	(CI)
Alabama	1.1	(0.8)	2.3	(2.8)	2.6	(1.2)	8.6	(4.4)
Arizona	3.8	(1.3)	10.4	(4.6)	3.5	(1.1)	9.6	(4.2)
California	4.6	(1.3)	11.1	(4.3)	3.9	(1.0)	11.5	(4.0)
Colorado	—	—	—	—	—	—	—	—
Connecticut	—	—	—	—	—	—	—	—
Delaware	—	—	—	—	—	—	—	—
Dist. of Col.	2.4	(1.0)	3.0	(3.0)	1.8	(0.8)	2.1	(2.0)
Florida	4.6	(1.4)	16.2	(6.2)	3.3	(1.2)	8.3	(4.2)
Georgia	3.2	(1.2)	8.3	(4.4)	2.2	(0.9)	5.4	(3.4)
Hawaii	3.3	(1.2)	8.8	(4.3)	3.5	(1.0)	7.6	(3.4)
Idaho	3.2	(1.3)	9.6	(4.9)	2.3	(0.9)	3.9	(2.5)
Illinois	6.6	(1.8)	18.9	(6.9)	3.9	(1.1)	11.1	(4.5)
Indiana	4.4	(1.3)	11.3	(4.5)	2.4	(0.8)	6.8	(2.9)
Iowa	—	—	—	—	—	—	—	—
Kentucky	1.4	(0.8)	3.0	(2.8)	1.3	(0.6)	2.3	(1.7)
Louisiana	—	—	—	—	—	—	—	—
Maine	—	—	—	—	1.7	(0.9)	3.7	(3.8)
Maryland	—	—	—	—	2.8	(1.2)	10.2	(5.4)
Massachusetts	5.3	(1.6)	12.7	(5.9)	4.2	(1.3)	11.3	(4.7)
Michigan	—	—	—	—	—	—	—	—
Minnesota	5.5	(0.9)	14.9	(3.3)	6.2	(1.0)	17.7	(3.5)
Mississippi	—	—	—	—	—	—	—	—
Missouri	4.1	(1.6)	14.7	(6.8)	4.2	(1.2)	10.9	(4.2)
Montana	6.4	(1.8)	16.7	(6.8)	6.4	(1.8)	19.4	(7.3)
Nebraska	—	—	—	—	6.6	(1.9)	21.7	(7.4)
New Hampshire	—	—	—	—	4.9	(1.4)	16.0	(5.8)
New Mexico	3.7	(1.2)	13.0	(5.0)	2.0	(1.0)	4.7	(3.2)
New York	1.8	(0.9)	6.6	(4.2)	2.2	(1.2)	9.4	(5.7)
North Carolina	2.9	(1.1)	9.2	(4.4)	1.7	(0.8)	4.8	(3.0)
North Dakota	5.7	(1.6)	14.9	(5.7)	5.6	(1.3)	16.6	(4.9)
Ohio	4.4	(1.5)	12.7	(6.1)	3.6	(1.1)	11.9	(4.3)

ected adult demographic groups in participating states—Behavioral

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State	1968				1989				1990			
	≥18 years		Men 18-34		≥18 years		Men 18-34		≥18 years		Men 18-34	
	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)
Ala.	1.6 (0.7)	3.6 (2.5)	2.1 (0.7)	4.9 (2.5)	1.8 (0.6)	5.2 (2.5)	2.1 (0.7)	4.9 (2.5)	1.8 (0.6)	5.2 (2.5)	2.1 (0.7)	4.9 (2.5)
Ark.	2.9 (1.0)	9.6 (4.3)	3.4 (1.1)	10.2 (4.2)	3.4 (1.0)	9.6 (4.2)	3.4 (1.1)	10.2 (4.2)	3.4 (1.0)	9.6 (4.2)	3.4 (1.1)	10.2 (4.2)
Cal.	3.9 (0.8)	10.2 (3.0)	3.5 (1.0)	11.1 (4.0)	3.4 (0.8)	8.1 (2.6)	3.4 (0.8)	8.1 (2.6)	2.9 (1.1)	6.8 (3.8)	3.4 (0.9)	9.4 (3.5)
Col.	—	—	—	—	—	—	—	—	1.9 (0.8)	5.6 (3.3)	—	—
Conn.	3.8 (1.4)	12.7 (5.8)	3.1 (1.0)	9.2 (4.1)	3.4 (0.9)	9.4 (3.5)	3.4 (0.9)	9.4 (3.5)	3.4 (0.9)	9.4 (3.5)	3.4 (0.9)	9.4 (3.5)
Del.	—	—	—	—	—	—	—	—	1.9 (0.8)	5.6 (3.3)	—	—
Fla.	2.2 (1.0)	5.6 (3.2)	2.5 (0.9)	4.7 (3.0)	1.5 (0.7)	2.2 (1.9)	2.5 (0.9)	4.7 (3.0)	1.5 (0.7)	2.2 (1.9)	2.5 (0.9)	4.7 (3.0)
Ga.	2.5 (0.9)	9.2 (4.0)	2.6 (0.9)	8.7 (4.6)	2.1 (0.6)	5.1 (2.3)	2.6 (0.9)	8.7 (4.6)	2.1 (0.6)	5.1 (2.3)	2.6 (0.9)	8.7 (4.6)
Idaho	3.1 (0.9)	9.0 (3.0)	2.2 (0.9)	5.5 (3.5)	1.5 (0.6)	2.6 (1.7)	3.1 (0.9)	9.0 (3.0)	2.2 (0.9)	5.5 (3.5)	1.5 (0.6)	2.6 (1.7)
Ill.	3.5 (1.0)	7.4 (3.2)	3.9 (1.1)	7.7 (3.4)	3.9 (1.1)	7.9 (3.6)	3.5 (1.0)	7.4 (3.2)	3.9 (1.1)	7.9 (3.6)	3.5 (1.0)	7.4 (3.2)
Ind.	3.2 (1.1)	9.0 (4.2)	2.2 (0.8)	6.5 (3.6)	1.3 (0.6)	2.0 (1.7)	3.2 (1.1)	9.0 (4.2)	2.2 (0.8)	6.5 (3.6)	1.3 (0.6)	2.0 (1.7)
Iowa	2.9 (1.0)	6.6 (3.5)	2.8 (0.9)	9.5 (3.5)	3.8 (1.1)	7.5 (3.2)	2.9 (1.0)	6.6 (3.5)	2.8 (0.9)	9.5 (3.5)	3.8 (1.1)	7.5 (3.2)
Kent.	3.5 (1.1)	11.7 (4.7)	2.2 (0.7)	5.3 (2.4)	3.0 (0.9)	9.4 (3.8)	3.5 (1.1)	11.7 (4.7)	2.2 (0.7)	5.3 (2.4)	3.0 (0.9)	9.4 (3.8)
Louis.	3.2 (1.6)	7.4 (5.3)	4.1 (1.4)	12.6 (5.3)	2.7 (1.1)	9.0 (4.7)	3.2 (1.6)	7.4 (5.3)	4.1 (1.4)	12.6 (5.3)	2.7 (1.1)	9.0 (4.7)
Maine	1.4 (0.7)	5.5 (3.2)	1.6 (0.7)	3.4 (2.4)	0.9 (0.5)	3.1 (2.1)	1.4 (0.7)	5.5 (3.2)	1.6 (0.7)	3.4 (2.4)	0.9 (0.5)	3.1 (2.1)
Maryl.	—	—	—	—	3.5 (1.6)	8.2 (4.6)	—	—	3.5 (1.6)	8.2 (4.6)	—	—
Mass.	2.9 (1.0)	9.0 (4.2)	2.0 (0.8)	5.9 (3.5)	0.7 (0.5)	1.2 (1.4)	2.9 (1.0)	9.0 (4.2)	2.0 (0.8)	5.9 (3.5)	0.7 (0.5)	1.2 (1.4)
Mich.	1.5 (1.0)	3.8 (4.1)	1.1 (0.7)	3.5 (2.9)	0.9 (0.5)	2.5 (2.1)	1.5 (1.0)	3.8 (4.1)	1.1 (0.7)	3.5 (2.9)	0.9 (0.5)	2.5 (2.1)
Minn.	4.6 (1.3)	12.0 (5.0)	3.3 (1.1)	8.9 (4.6)	2.7 (0.9)	9.1 (4.1)	4.6 (1.3)	12.0 (5.0)	3.3 (1.1)	8.9 (4.6)	2.7 (0.9)	9.1 (4.1)
Miss.	4.9 (1.3)	11.6 (4.3)	4.4 (1.0)	10.5 (3.4)	3.3 (0.8)	9.1 (3.2)	4.9 (1.3)	11.6 (4.3)	4.4 (1.0)	10.5 (3.4)	3.3 (0.8)	9.1 (3.2)
Miss.	5.9 (1.0)	17.5 (3.6)	3.8 (0.7)	8.4 (2.5)	3.3 (0.6)	7.8 (2.3)	5.9 (1.0)	17.5 (3.6)	3.8 (0.7)	8.4 (2.5)	3.3 (0.6)	7.8 (2.3)
Mont.	—	—	—	—	1.6 (0.7)	6.5 (3.6)	—	—	1.6 (0.7)	6.5 (3.6)	—	—
Neb.	2.7 (1.0)	8.1 (4.0)	2.6 (0.9)	7.0 (3.4)	3.3 (1.1)	9.0 (4.3)	2.7 (1.0)	8.1 (4.0)	2.6 (0.9)	7.0 (3.4)	3.3 (1.1)	9.0 (4.3)
Nev.	6.0 (1.9)	18.9 (7.4)	5.0 (1.6)	15.4 (6.5)	3.9 (1.3)	8.8 (4.9)	6.0 (1.9)	18.9 (7.4)	5.0 (1.6)	15.4 (6.5)	3.9 (1.3)	8.8 (4.9)
N.H.	4.3 (1.4)	14.3 (5.8)	4.4 (1.3)	14.3 (5.3)	5.0 (1.3)	16.8 (5.6)	4.3 (1.4)	14.3 (5.8)	4.4 (1.3)	14.3 (5.3)	5.0 (1.3)	16.8 (5.6)
N.J.	3.5 (1.3)	11.5 (5.4)	3.5 (1.2)	9.6 (4.7)	2.0 (0.7)	5.0 (2.9)	3.5 (1.3)	11.5 (5.4)	3.5 (1.2)	9.6 (4.7)	2.0 (0.7)	5.0 (2.9)
N.M.	3.0 (1.2)	4.8 (3.1)	4.0 (1.4)	8.5 (5.3)	3.1 (1.2)	9.0 (4.4)	3.0 (1.2)	4.8 (3.1)	4.0 (1.4)	8.5 (5.3)	3.1 (1.2)	9.0 (4.4)
N.Y.	1.8 (0.9)	4.5 (3.4)	1.3 (0.7)	1.9 (2.0)	1.2 (0.6)	3.3 (2.7)	1.8 (0.9)	4.5 (3.4)	1.3 (0.7)	1.9 (2.0)	1.2 (0.6)	3.3 (2.7)
Ohio	3.1 (1.2)	9.6 (4.6)	1.6 (0.8)	5.6 (3.1)	1.5 (0.6)	6.1 (2.7)	3.1 (1.2)	9.6 (4.6)	1.6 (0.8)	5.6 (3.1)	1.5 (0.6)	6.1 (2.7)
Ore.	5.9 (1.4)	17.4 (5.2)	5.9 (1.4)	18.4 (5.3)	4.0 (1.2)	9.1 (4.1)	5.9 (1.4)	17.4 (5.2)	5.9 (1.4)	18.4 (5.3)	4.0 (1.2)	9.1 (4.1)
Penn.	3.6 (1.1)	10.3 (4.2)	2.8 (1.2)	5.8 (3.7)	3.0 (1.1)	7.3 (4.3)	3.6 (1.1)	10.3 (4.2)	2.8 (1.2)	5.8 (3.7)	3.0 (1.1)	7.3 (4.3)

Oklahoma	—	—	—	—
Oregon	—	—	—	—
Pennsylvania	—	—	—	—
Rhode Island	2.6 (0.9)	6.3 (3.4)	1.7 (0.7)	4.3 (2.5)
South Carolina	2.6 (0.9)	—	3.5 (0.9)	8.7 (3.2)
South Dakota	—	—	5.5 (1.6)	15.6 (5.7)
Tennessee	1.8 (0.7)	5.7 (3.2)	2.6 (0.8)	7.7 (3.1)
Texas	—	—	6.1 (1.5)	16.7 (5.7)
Utah	3.4 (1.2)	8.9 (3.9)	2.1 (1.0)	4.3 (3.2)
Vermont	—	—	—	—
Virginia	—	—	—	—
Washington	—	—	2.8 (1.0)	7.3 (3.5)
West Virginia	2.8 (1.2)	9.2 (4.9)	2.2 (0.9)	6.7 (3.9)
Wisconsin	9.5 (1.8)	24.6 (6.0)	8.2 (1.6)	19.5 (5.4)
Median	3.6	10.0	3.3	8.7
Low	1.1	2.3	1.3	2.1
High	9.5	24.6	8.2	21.7

*Persons who report driving after having too much to drink one or
† ± 95% Confidence interval.

— Not available.

	3.4 (1.4)	10.4 (5.7)	2.3 (0.9)	7.4 (3.8)	2.2 (1.0)	6.3 (4.3)
	—	—	3.5 (1.1)	10.4 (4.8)	1.8 (0.5)	4.9 (2.3)
	—	—	3.7 (1.0)	10.1 (4.3)	3.4 (0.8)	8.1 (2.9)
2.5)	2.6 (0.9)	8.2 (3.5)	3.0 (1.0)	9.3 (4.2)	2.3 (0.8)	8.1 (3.7)
3.2)	1.4 (0.6)	4.0 (2.4)	2.4 (0.9)	5.7 (2.8)	1.9 (0.7)	3.8 (2.6)
5.7)	6.0 (1.7)	17.0 (6.1)	4.9 (1.2)	14.2 (4.5)	3.5 (1.0)	9.8 (3.8)
3.1)	2.2 (0.7)	6.9 (3.0)	1.7 (0.6)	6.4 (3.0)	1.2 (0.4)	3.8 (1.8)
5.7)	3.8 (1.2)	8.8 (4.1)	5.6 (1.4)	11.8 (4.8)	4.8 (1.3)	13.2 (4.5)
3.2)	1.5 (0.7)	5.3 (3.0)	1.5 (0.7)	3.3 (2.4)	1.3 (0.6)	2.9 (2.0)
	—	—	—	—	4.2 (1.5)	11.8 (5.8)
	—	—	2.9 (1.0)	7.6 (3.6)	3.6 (1.0)	9.1 (3.8)
3.5)	4.0 (1.3)	10.3 (5.0)	2.6 (0.9)	7.5 (3.6)	2.9 (0.9)	8.3 (3.9)
3.9)	1.4 (0.8)	3.8 (3.3)	1.5 (0.8)	5.8 (3.8)	0.9 (0.4)	2.8 (1.8)
5.4)	8.4 (1.3)	24.0 (6.0)	5.7 (1.4)	15.8 (5.0)	5.9 (1.3)	15.0 (4.5)
	3.2	9.0	2.9	8.1	2.9	7.8
	1.4	3.6	1.1	1.9	0.7	1.2
	8.4	24.0	5.9	18.4	5.9	16.8

one or more times in the past month.

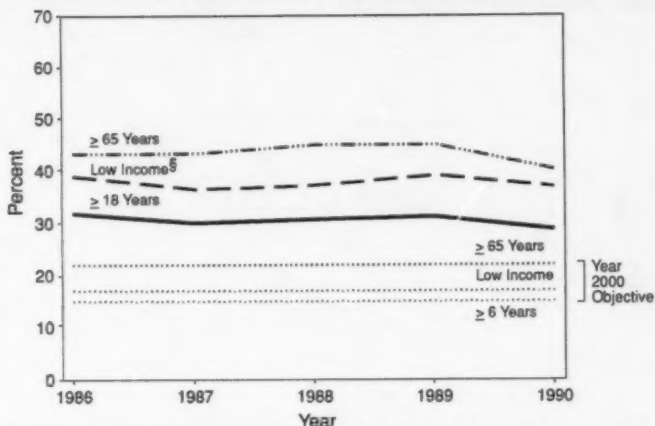
TABLE 8. Prevalence of safety belt nonuse* among adults ages ≥ 18 years in participating states — Behavioral Risk Factor Surveillance System, 1986–1990

	1986		1987		1988		1989		1990	
State	%	(CI) [†]	%	(CI)	%	(CI)	%	(CI)	%	(CI)
Alabama	62.7	(4.7)	55.8	(3.3)	47.8	(2.9)	42.5	(2.5)	39.4	(2.3)
Arizona	44.1	(3.3)	43.8	(3.4)	35.8	(3.2)	33.1	(2.8)	30.0	(2.7)
California	20.2	(2.4)	19.1	(2.2)	18.4	(1.8)	16.3	(1.7)	12.8	(1.5)
Colorado	—	—	—	—	—	—	—	—	17.2	(2.1)
Connecticut	—	—	—	—	25.2	(2.8)	24.7	(2.6)	22.5	(2.1)
Delaware	—	—	—	—	—	—	—	—	31.4	(2.9)
Dist. of Col.	28.1	(3.4)	14.2	(2.3)	20.8	(2.7)	26.5	(2.6)	25.8	(2.6)
Florida	42.4	(3.4)	18.0	(2.4)	21.5	(2.4)	17.8	(2.1)	19.9	(2.0)
Georgia	60.6	(3.4)	53.0	(3.1)	33.8	(3.3)	25.0	(2.5)	23.1	(2.2)
Hawaii	8.8	(1.9)	7.0	(1.5)	6.5	(1.6)	6.3	(1.5)	4.9	(1.3)
Idaho	51.2	(3.4)	42.1	(2.7)	37.5	(2.6)	31.8	(2.6)	29.2	(2.4)
Illinois	35.4	(3.1)	37.8	(2.6)	32.4	(2.6)	30.9	(2.5)	28.8	(2.5)
Indiana	59.1	(3.2)	42.3	(2.7)	30.1	(2.3)	30.7	(2.2)	27.7	(2.0)
Iowa	—	—	—	—	23.7	(3.5)	23.2	(2.7)	23.7	(2.5)
Kentucky	63.8	(3.2)	60.2	(2.6)	52.5	(2.7)	47.8	(2.7)	46.1	(2.8)
Louisiana	—	—	—	—	—	—	—	—	24.2	(3.7)
Maine	—	—	55.3	(3.1)	49.2	(3.1)	46.4	(3.0)	41.1	(3.1)
Maryland	—	—	21.8	(3.3)	18.9	(2.7)	16.1	(2.0)	13.2	(1.9)
Massachusetts	33.3	(3.3)	45.5	(3.0)	49.6	(2.9)	48.5	(3.2)	46.3	(3.1)
Michigan	—	—	—	—	22.4	(2.7)	20.3	(1.9)	21.0	(1.9)
Minnesota	48.3	(2.1)	36.5	(1.9)	26.7	(1.7)	23.9	(1.6)	23.5	(1.6)
Mississippi	—	—	—	—	—	—	—	—	48.2	(2.9)
Missouri	47.3	(4.0)	37.7	(3.0)	24.9	(2.5)	28.1	(2.6)	27.3	(2.6)
Montana	61.8	(3.1)	49.7	(3.3)	28.8	(3.2)	27.8	(3.0)	28.2	(2.9)
Nebraska	—	—	49.6	(3.2)	51.3	(2.9)	56.5	(2.8)	50.9	(2.7)
New Hampshire	—	—	52.5	(3.1)	52.4	(3.4)	48.2	(2.9)	40.1	(2.8)
New Mexico	17.8	(2.5)	17.8	(2.9)	20.3	(2.8)	14.7	(2.3)	12.2	(2.1)
New York	19.9	(2.7)	21.7	(2.8)	24.1	(2.9)	18.5	(2.5)	20.2	(2.4)
North Carolina	30.6	(2.6)	13.9	(1.9)	13.1	(1.9)	15.3	(2.0)	15.7	(1.7)
North Dakota	71.2	(3.3)	69.1	(2.5)	60.5	(2.8)	58.2	(2.8)	59.6	(2.7)
Ohio	35.4	(3.4)	27.0	(2.6)	27.8	(2.7)	28.0	(2.8)	23.9	(2.8)
Oklahoma	—	—	—	—	33.6	(3.3)	29.2	(3.1)	25.9	(2.5)
Oregon	—	—	—	—	—	—	34.8	(2.5)	33.4	(1.8)
Pennsylvania	—	—	—	—	—	—	30.3	(2.4)	25.7	(1.9)
Rhode Island	59.4	(2.7)	52.6	(2.7)	47.0	(2.7)	47.0	(2.6)	48.7	(2.6)
South Carolina	52.4	(2.6)	52.4	(2.6)	48.7	(2.7)	38.7	(2.7)	14.1	(1.7)
South Dakota	—	—	72.0	(2.9)	67.4	(3.1)	61.9	(2.6)	57.3	(2.8)
Tennessee	50.6	(2.7)	33.8	(2.1)	32.5	(2.2)	29.1	(2.1)	25.7	(1.9)
Texas	—	—	16.5	(2.4)	15.4	(2.6)	15.0	(2.1)	14.9	(2.1)
Utah	47.4	(3.4)	39.2	(3.0)	33.3	(2.7)	34.6	(2.7)	30.5	(2.4)
Vermont	—	—	—	—	—	—	—	—	33.9	(3.4)
Virginia	—	—	—	—	—	—	16.1	(2.5)	16.2	(1.9)
Washington	—	17.0	(2.3)	16.0	(2.2)	15.1	(2.0)	15.5	(1.8)	
West Virginia	61.9	(2.9)	59.3	(2.8)	56.1	(2.8)	52.1	(2.9)	46.1	(2.3)
Wisconsin	61.9	(2.9)	54.0	(2.9)	25.6	(2.7)	27.6	(2.7)	28.8	(2.8)
Median	47.9		42.1		30.1		28.6		25.9	
Low	8.8		7.0		6.5		6.3		4.9	
High	71.2		72.0		67.4		61.9		59.6	

*Persons who report sometimes, seldom, or never using safety belts.

[†] $\pm 95\%$ Confidence interval.

— Not available.

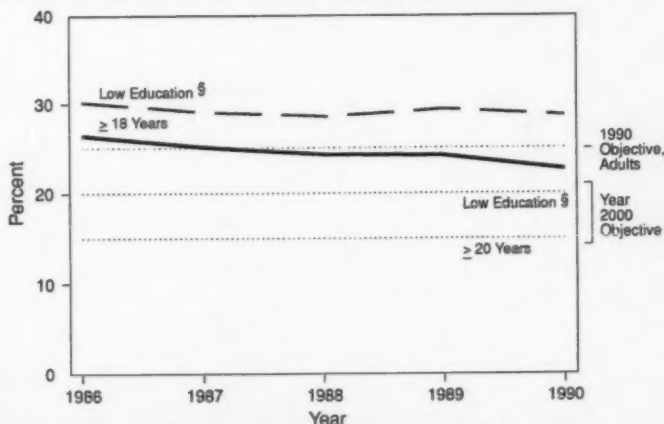
FIGURE 1. No leisure-time physical activity*, BRFSS median prevalence, 1986–1990†

*Persons who report no exercise, recreation, or physical activities (other than regular job duties) during the previous month.

†BRFSS = Behavioral Risk Factor Surveillance System.

Number of participating states ranged from 26 in 1986 to 45 in 1990.

§Family income ≤ \$20,000.

FIGURE 2. Smoking*, BRFSS median prevalence, 1986–1990†

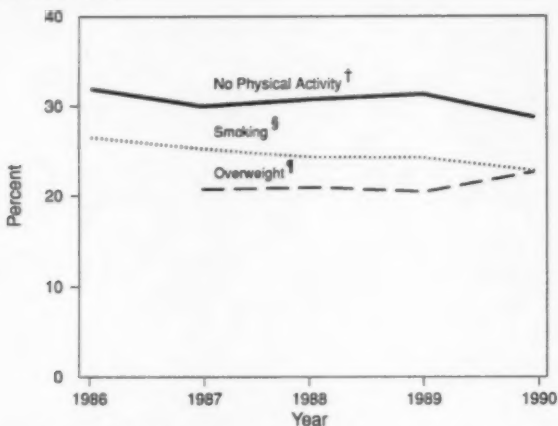
*Persons who have ever smoked 100 cigarettes and currently smoke regularly.

†BRFSS = Behavioral Risk Factor Surveillance System.

Number of participating states ranged from 26 in 1986 to 45 in 1990.

§High school education or less.

FIGURE 3. Cardiovascular risk factors for persons ≥ 18 years old, BRFSS median prevalence, 1986-1990*



*BRFSS = Behavioral Risk Factor Surveillance System.

Number of participating states ranged from 26 in 1986 to 45 in 1990.

[†]Persons who report no exercise, recreation, or physical activities (other than regular job duties) during the previous month.

[‡]Persons who have ever smoked 100 cigarettes and currently smoke regularly.

[§]Body mass index ≥ 27.8 for males and ≥ 27.3 for females.

Body mass index calculations began in 1987.

APPENDIX 1.
Behavioral Risk Factor Surveillance System state coordinators, 1991

State	Coordinator	Phone number
Alabama	Laurie Eldridge	205-242-2848
Alaska	Patricia Owen	907-465-3140
Arizona	John Contreras	602-255-1292
Arkansas	Kimberlea Kellogg	501-661-2368
California	Laura Lund	916-327-7767
Colorado	Marilyn Leff	303-331-4902
Connecticut	Mary Adams	203-566-6618
Delaware	Fred Breukelman	302-739-4787
District of Columbia	Louisiana Jones	202-727-4921
Florida	Scott Hoecherl	904-488-2901
Georgia	J. David Smith	404-894-6525
Guam	Joe Borja	011-671-734-7305
Hawaii	Arnold Villafuerte	808-586-4661
Idaho	Joanne Mitten	208-334-5933
Illinois	Bruce Steiner	217-785-2060
Indiana	Ray Guest	317-633-0268
Iowa	Susan Schoon	515-281-3763
Kansas	Paula Marmet	913-296-1207
Kentucky	Karen Bramblett	502-564-7112
Louisiana	Shirley Kirkconnell	504-568-7210
Maine	Jean Sheridan	207-289-5180
Maryland	Alyse Weinstein	301-225-6807
Massachusetts	Ruth Lederman	617-727-2735
Michigan	John Thrush	517-335-8397
Minnesota	Nagi Salem	612-623-5502
Mississippi	Ellen Jones	601-960-7499
Missouri	Jeannette J. Thompson	314-876-3248
Montana	Marsha McFarland	406-444-2555
Nebraska	Sue Spanhake	402-471-3488
Nevada	Martin Atherton	702-687-4480
New Hampshire	Kay Zaso	603-271-4549
New Jersey	Georgette Boeselager	609-588-7470
New Mexico	Mary Ellen Watson	505-827-2501
New York	Coleen Baker	518-473-0622
North Carolina	Chanetta Washington	919-733-7081
North Dakota	Marge Maetzold	701-224-2367
Ohio	Ellen Capwell	614-466-2144
Oklahoma	Neil Hann	405-271-5601
Oregon	Joyce Grant-Worley	503-229-6123
Pennsylvania	Cathy Becker	717-787-5900
Rhode Island	Jay Buechner	401-277-2550
South Carolina	Marcia Mace	803-737-4120
South Dakota	Susan Moritz	605-773-3693
Tennessee	David Ridings	615-741-0380
Texas	Julie Fellows	512-458-7405
Utah	Lynne Nilson	801-538-6120
Vermont	Peggy Brozicevic	802-863-7298
Virginia	Ann Forberger	804-786-3551
Virgin Islands	Anne Hatcher	809-773-1311
Washington	Teresa Jennings	206-586-8729
West Virginia	Roger Barker	304-348-0644
Wisconsin	Eleanor Cautley	608-267-9545
Wyoming	Menlo Futo	307-777-6011

Results of Testing for Intestinal Parasites by State Diagnostic Laboratories, United States, 1987

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Summary

We analyzed results of 216,275 stool specimens examined by the state diagnostic laboratories in 1987; parasites were found in 20.1%. Percentages were highest for protozoans: *Giardia lamblia* (7.2%), *Entamoeba coli* and *Endolimax nana* (4.2% each), *Blastocystis hominis* (2.6%), *Entamoeba histolytica* (0.9%), and *Cryptosporidium* species (0.2%). Identifications of *Giardia lamblia* increased broadly from the 4.0% average found in 1979, with 40 states reporting increases and seven decreases. Most states that identified *Giardia* in more than 9% of specimens were located around the Great Lakes or in the Northwest. Seasonally, *Giardia* identifications increased in the summer and fall, especially in northern states.

The most identified helminths were nematodes: hookworm (1.5%), *Trichuris trichiura* (1.2%), and *Ascaris lumbricoides* (0.8%). Other less commonly identified helminths included *Clonorchis* and *Opisthorchis* species (0.6%), *Strongyloides stercoralis* (0.4%), *Hymenolepis nana* (0.4%), *Enterobius vermicularis* (0.4%), and *Taenia* species (0.1%). Tape tests for *Enterobius*, reported for 35 states, were positive for 11.4% of 9,597 specimens. Nine states (California, Colorado, Hawaii, Idaho, New Jersey, Oregon, Rhode Island, Washington, Wisconsin) reported hookworms in more than 2% of specimens; none were states traditionally associated with indigenous transmission.

Cryptosporidium diagnoses, reported by 25 of 49 states, were recorded for the first time in a national survey and showed no marked regional clustering. The *Giardia* data revealed changes in rates of identification and in geographic patterns compared with state laboratory data collected a decade earlier (1976-1978).

INTRODUCTION

The most recently published account of testing by the state diagnostic laboratories for intestinal parasites was based on data collected in 1978 (1). Since that time several developments may have affected the prevalence or detection of intestinal parasites in persons in the United States. These include the immigration of large numbers of persons from southeast Asia, the Caribbean, and South America (2-5); improved techniques for detection of parasites, such as *Cryptosporidium* species; the recognition of several opportunistic parasitic infections in patients with acquired immunodeficiency syndrome (AIDS) (6); and a rapid increase in the number of children receiving institutional day care in conjunction with recognition of *Giardia lamblia* as a frequent pathogen in the day care setting (7). Because of these

developments, the Division of Parasitic Diseases, National Center for Infectious Diseases (NCID), in collaboration with the Association of Directors of the State and Territorial Laboratories, surveyed the results of testing for intestinal parasites in the United States during 1987 (Table 1).

METHODS

In May 1987, each of the state and territorial laboratory directors was sent forms for reporting the following information by month for all of 1987: the number of stool specimens tested by microscopy for intestinal parasites by all state-supported laboratories; the number of specimens with one or more parasites detected; the species of the parasites identified; and the total number of "tape tests" for pinworm diagnosis performed, along with the number positive. Analyses for seasonal trends were based on reports from laboratories that provided data for 12 months. This excluded approximately 12% of the records overall, including reports from Arizona, Nevada, Virginia, Wisconsin, and from some of the regional laboratories in California and Louisiana. The nominal month of report was affected by the time required for specimens to be collected, processed, and examined, and this period averaged at least 1 month after onset of illness.

All laboratories routinely carried out concentration procedures and examined each stool specimen microscopically for parasites and ova. However, most of the states either did not offer specialized testing to improve detection of *Cryptosporidium* species (Delaware, Louisiana, Rhode Island) or conducted such testing only if it was specifically requested (37 states). Nine states (Georgia, New Mexico, North Dakota, Oklahoma, Oregon, South Carolina, South Dakota, Texas, Utah) routinely included specific testing for *Cryptosporidium*.

A summary tabulation of the data for each state was supplied to its state laboratory director for verification. Calculations involving populations were based on census projections for 1987.

RESULTS

Specimens Examined

Results were obtained from 49 states (Wyoming does not provide diagnoses for intestinal parasites) for a total of 216,275 stool specimens; of these, 43,539 (20.1%) were positive for one or more parasites (Table 2). Fewer than 1,000 specimens were examined in 13 states; 1,000 to 9,999 specimens were examined in 32 states; and more than 10,000 were examined in four states. Rates for specimens examined by population varied widely among the states, from 731.8 specimens/100,000 population in Vermont to 0.4/100,000 in Pennsylvania.

The percentage of specimens with parasites identified was less than 10% in eight states, was from 10% to 25% in 28 states, and greater than 25% in 13 states. For states that examined more than 1,000 specimens, positive results ranged from 7.9% to 44.2%.

In general, laboratories in southern states examined larger numbers of specimens and reported lower percentages positive for parasites. The East South Central and the South Atlantic regions, including all the southern states east of the Mississippi River (Figure 1), had the highest rates for specimens examined by population (159.3 and 143.4 specimens/100,000 population, respectively) and the lowest average percentages for positive specimens (12.2% and 13.7%, respectively).

The total numbers of specimens examined and the average percentages of positive results varied only slightly by quarter during 1987. The percentage of the year's total examinations reported each quarter ranged from 23.9% to 27.5%. The percentage of specimens that were positive for one or more parasites ranged from 19.8% to 20.7% among the quarters. The highest percentages of testing and of positive results were recorded for the third quarter (July–September).

Types of Parasites Identified

Protozoa

Protozoa were much more frequently identified than helminths. The protozoan species *Giardia lamblia* was the most frequently identified parasite. The 15,497 identifications of *Giardia lamblia* accounted for 7.2% of all specimens examined. It was the most frequently identified parasite in 39 states and the most frequently identified pathogenic parasite in all but five states (Table 3). The states with the highest rates of *Giardia* identification were located around the Great Lakes and in a band extending west to Washington and Oregon (Figure 2). Trends toward increased identifications in warm months were strongest in the Midwest (Figure 3).

Other pathogenic protozoa were less frequently identified than *Giardia*. Although *Blastocystis hominis* was identified in 31 states and in 2.6% (5,685) of the specimens examined, most (72.9%) of the identifications were made in California, where it was the most frequently identified intestinal parasite. The pathogenicity of *Blastocystis hominis* has been strongly questioned by recent studies (8).

Entamoeba histolytica was identified in 0.9% of the specimens. Although *Entamoeba histolytica* was reported by 45 states, California laboratories accounted for 45.6% of the identifications. California also reported 55.8% of the identifications of *Dientamoeba fragilis*, which was reported from a total of 24 states. *Cryptosporidium* species were identified in 499 specimens from 25 states. Most of the 197 identifications from Georgia were associated with outbreaks in day care centers, although a major waterborne outbreak of cryptosporidiosis was also documented in Georgia during 1987. Other pathogenic protozoa were infrequently reported from stool specimens: 21 positive results for *Trichomonas hominis*, 14 for *Isospora belli*, and seven for *Balantidium coli*.

Except for *Giardia*, two nonpathogenic protozoan species, *Entamoeba coli* and *Endolimax nana*, were the most frequently identified intestinal parasites. Each of these species was identified on average in 4.2% of all specimens tested. Other nonpathogenic species were identified less frequently; *Entamoeba hartmanni* was found in 1.4% of the specimens, *Iodamoeba buetschlii* in 0.6%, and *Chilomastix mesnili* in 0.3%. For 184 reports of "nonpathogenic protozoa," the species was not named.

Helminths

Eight helminths were identified in 100 or more specimens: five nematodes (hookworms, *Trichuris trichiura*, *Ascaris*, *Strongyloides stercoralis*, and *Enterobius vermicularis*), one trematode group (*Clonorchis/Opisthorchis*), and two cestodes (*Hymenolepis nana* and *Taenia* sp.). Laboratories in the Pacific region, which together examined 21.5% of the specimens, reported 45.6% of identifications of these eight helminths.

Nematodes

Hookworms were the most frequently identified helminths; the 3,299 positive specimens reported from 39 states represented 1.5% of all specimens examined. Figure 4 displays the states according to the percentage of specimens with hookworm. Four of the seven states with more than 2% identification rates for hookworm were clustered along the West Coast. None were located in the Southeast, where indigenous hookworm infection historically has been transmitted.

The majority (59.4%) of the 2,682 *Trichuris trichiura* identifications were reported from states in the Pacific region, although the parasite was reported by a total of 40 states. Three other nematode species were reported frequently: *Ascaris lumbricoides* (1,735 identifications from 44 states), *Strongyloides stercoralis* (969 identifications from 37 states), and *Enterobius vermicularis* (850 identifications from 30 states). States in the Pacific region reported 49.3% of the identifications of *Ascaris lumbricoides* and 42.2% of the identifications of *Strongyloides stercoralis*. In contrast, 76.7% of pinworms (*Enterobius vermicularis*) identified were from states in the South Atlantic region, 62.4% of which were from Georgia.

In addition to testing stool specimens, 35 states also reported identification of *Enterobius vermicularis* through tape tests. Tape testing is a sensitive and widely used technique for specific diagnosis of pinworm among patients with suspected infection. Whether these same cases were also identified by stool examination was not indicated. A total of 1,094 *Enterobius vermicularis* identifications from 9,597 specimens (11.4% positive) were reported by 31 states with the tape test technique. Sixty-one percent of positive results were reported from the South Atlantic region, which also accounted for 61.6% of the tape tests conducted.

Trematodes

The 1,226 specimens positive for the *Clonorchis*/*Opisthorchis* group represented the most frequently identified trematodes in this survey; no separation of species in this group was requested. These flukes were identified in 30 states representing all the regions. Several other trematodes were infrequently identified: 19 reports of *Schistosoma mansoni*, seven reports of *Fasciola hepatica*, seven reports of *Paragonimus* sp., and one report of *Fasciolopsis buski*.

Cestodes

Hymenolepis nana, the most frequently reported tapeworm, was identified in 900 specimens from 34 states. The majority (60.4%) were from the Pacific region. There were 121 reports of *Taenia*, including 41 from California and 14 from Washington State. All of the 14 *Taenia* identified to species were *Taenia saginata*. There were 16 reports of *Hymenolepis diminuta*, 14 of *Diphyllobothrium latum*, and 11 of *Dipylidium caninum*.

DISCUSSION

Information for characterizing persons tested in each state was not obtained in this survey; however, laboratory directors indicated that procedures for acquiring specimens and the consequent inclusion of population groups at high risk of infection varied widely from state to state. Thus, the results of this survey may have been influenced by selection bias, and inferences regarding the prevalence of parasites in the United States or regional differences in the prevalence of parasites should be

drawn with caution. However, *because* procedures for selecting specimens and the numbers of specimens did vary greatly among the states, consistently repeated trends among states probably represent valid national patterns.

One trend that fits the national pattern for consistency is the increased reporting of *Giardia lamblia*. *Giardia*, the most frequently identified parasite in every season, in eight of the nine regions, and in 39 states, was also the most frequently identified parasite in the series of laboratory surveys in the United States for 1976-1978 and in a similar survey in Canada for 1979 (1, 9-12). However, these 1987 data suggest a strong increase since those surveys. The percentage of specimens positive for *Giardia* in 1987 was 7.2%, compared with 4.0% found by the 1978 survey. This increase was broadly based, occurring in 39 states; by contrast, only seven states reported a decrease. The trend was geographically widespread; all nine of the regions recorded an increased percentage of *Giardia* identifications, but the greatest increases were noted in states around the Great Lakes.

The decrease from previous studies in the numbers of specimens tested was not a consistently reported trend. The overall total of specimens tested was 33.0% lower in 1987 than in the corresponding 1978 survey, but a decrease in numbers of specimens tested occurred in only 24 states, although increases occurred in 26 states. Of the six states that tested the most specimens in 1978, only California did not decrease its testing in 1987. If the other five states (Florida, Georgia, Virginia, Louisiana, South Carolina) and New York City had continued at their 1978 level of testing, the national total for 1987 would have been 320,526, 99.3% of the total for 1978. Thus, the decrease in specimens tested represents local changes rather than a national trend.

In 1987, hookworms were the most frequently identified helminths, accounting for 1.5% of specimens tested compared with 0.6% of specimens in 1978. However, the increase in hookworm identifications from the 1978 survey was not broadly based; 23 states reported increased percentages, 15 states reported decreases, and nine were unchanged. Most hookworm identifications (68.7%) were reported by laboratories in five states: California, Wisconsin, Rhode Island, Colorado, and Washington. None of these states are within the Southeast, the area of the country where hookworm was historically endemic, but all have sizable populations of refugees from Southeast Asia who were at risk of infection before entering the United States. Of the states historically associated with endemic hookworm, only Tennessee reported more than a 1% frequency of hookworm in examined specimens in 1987 (Figure 4). These observations suggest that the hookworm identifications in this survey largely involved persons whose infections were acquired outside the United States.

Three features included for the first time in a national survey of intestinal parasites in the United States are a) reports of *Cryptosporidium* species, b) results of tape tests for pinworm, and c) reports of monthly data to document seasonal trends in parasite identification. Sensitive diagnostic tests for *Cryptosporidium* were not available when the earlier national surveys of intestinal parasites were undertaken, but in this survey they were reported from 25 states across the country (Figure 5). The widespread locations of the identifications suggest that these parasites occur throughout the country and will be more frequently identified as improved diagnostic techniques are routinely employed. Because data for tape tests were not collected in earlier national surveys, the relative prevalence of pinworm cannot be compared with earlier surveys. The most notable seasonal variation in the monthly data was in the identification of

Giardia lamblia. The pattern of a summer or fall peak followed by a decline was strongest in midwestern and western areas, which include most of the states that reported higher percentages of *Giardia* identifications (Figure 2). More observations are needed to determine whether the seasonal trends of *Giardia* identification represent continuing patterns. The earlier national surveys did not reveal a similar geographic distribution, and data were not collected to detect monthly variation in the identification of parasites.

This national survey demonstrates the variety of pathogenic intestinal parasites that occur throughout the United States. Some parasites, such as *Giardia*, are occurring with increasing frequency. Others, such as *Cryptosporidium*, are only beginning to be recognized as important problems in the United States. Improved information about the demographic characteristics of infected patients is needed to determine the sources of their infections and to estimate the risk of further transmission.

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TABLE 1. Results of stool specimens examined for intestinal parasites—state public health laboratories, United States, 1987*

Organism	Stool specimens with organism		No. state laboratories with organism identified
	No.	%	
Protozoa			
<i>Giardia lamblia</i>	15,497	7.2	49
<i>Entamoeba coli</i>	9,146	4.2	49
<i>Endolimax nana</i> [†]	9,086	4.2	47
<i>Blastocystis hominis</i> [‡]	5,685	2.6	31
<i>Entamoeba hartmanni</i> [†]	3,069	1.4	38
<i>Entamoeba histolytica</i>	1,841	0.9	45
<i>Iodamoeba buetschlii</i> [†]	1,275	0.6	37
<i>Dientamoeba fragilis</i>	1,142	0.5	24
<i>Chilomastix mesnili</i> [†]	542	0.3	27
<i>Cryptosporidium</i> sp.	499	0.2	25
<i>Trichomonas hominis</i>	21	<0.1	10
<i>Isospora belli</i>	14	<0.1	7
<i>Balantidium coli</i>	7	<0.1	3
Unspecified protozoa	184	0.1	2
Helminths			
Nematodes			
Hookworm	3,299	1.5	39
<i>Trichuris trichiura</i>	2,682	1.2	40
<i>Ascaris lumbricoides</i>	1,735	0.8	44
<i>Strongyloides stercoralis</i>	969	0.4	37
<i>Enterobius vermicularis</i>	850	0.4	30
Cestodes			
<i>Hymenolepis nana</i>	900	0.4	34
<i>Taenia</i> species	107	<0.1	23
<i>Taenia saginata</i>	14	<0.1	8
<i>Hymenolepis diminuta</i>	16	<0.1	5
<i>Diphyllobothrium latum</i>	14	<0.1	7
<i>Dipylidium caninum</i>	11	<0.1	7
Trematodes			
<i>Clonorchis/Opisthorchis</i>	1,226	0.6	30
<i>Schistosoma mansoni</i>	19	<0.1	6
<i>Fasciola hepatica</i>	8	<0.1	2
<i>Paragonimus</i> species	7	<0.1	3

*Data compiled by the Division of Parasitic Diseases, National Center for Infectious Diseases, CDC.

[†]Organism considered nonpathogenic.

[‡]Status of pathogenicity is controversial.

TABLE 2. Number of stool specimens examined and number and percentage positive for intestinal parasites — state public health laboratories, United States, 1987

Reporting area	Total no. specimens examined	Positive specimens	
		No.	%
NEW ENGLAND			
Maine	326	27	8.3
New Hampshire	131	12	9.2
Vermont	4,010	509	12.7
Massachusetts	541	76	14.0
Rhode Island	4,929	987	20.0
Connecticut	2,067	440	21.3
MIDDLE ATLANTIC			
New York	852	205	24.1
New Jersey	714	181	25.4
Pennsylvania	52	27	51.9
EAST NORTH CENTRAL			
Ohio	458	68	14.8
Indiana	3,171	870	27.4
Illinois	4,738	1,200	25.3
Michigan	10,349	2,779	26.9
Wisconsin	9,422	1,719	18.2
WEST NORTH CENTRAL			
Minnesota	4,151	759	18.3
Iowa	5,384	881	16.4
Missouri	4,657	746	16.0
North Dakota	1,139	107	9.4
South Dakota	2,047	185	9.0
Nebraska	392	54	13.8
Kansas	6,587	1,096	16.6
SOUTH ATLANTIC			
Delaware	323	33	10.2
Maryland	5,347	575	10.8
Virginia	6,438	860	13.4
West Virginia	1,806	235	13.0
North Carolina	5,662	1,148	20.3
South Carolina	4,311	769	17.8
Georgia	21,732	3,099	14.3
Florida	14,192	1,469	10.4
EAST SOUTH CENTRAL			
Kentucky	2,896	349	12.1
Tennessee	3,248	582	17.9
Alabama	9,272	1,037	11.2
Mississippi	8,947	1,015	11.3
WEST SOUTH CENTRAL			
Arkansas	1,700	143	8.4
Louisiana	5,871	687	11.7
Oklahoma	1,710	382	22.3
Texas	1,351	597	44.2
MOUNTAIN*			
Montana	1,442	114	7.9
Idaho	470	156	33.2
Colorado	2,137	1,146	53.6
New Mexico	1,861	496	26.7
Arizona	65	29	44.6
Utah	425	69	14.7
Nevada	2,368	230	9.7
PACIFIC			
Washington	4,167	1,409	33.8
Oregon	2,253	680	30.2
California	36,373	12,903	35.5
Alaska	3,215	282	8.8
Hawaii	576	117	20.3
Total	216,275	43,539	20.1

*Wyoming does not provide diagnoses for intestinal parasites.



TABLE 3. Number and percentage of stool specimens positive for *Blastocystis hominis* and *Cryptosporidium parvum* in the United States, 1987

Reporting area	<i>Blastocystis hominis</i>		<i>Cryptosporidium parvum</i>	
	No.	%	No.	%
NEW ENGLAND				
Maine	2	0.6	0	0
New Hampshire	3	2.3	1	0.7
Vermont	21	0.5	0	0
Massachusetts	6	1.1	0	0
Rhode Island	0	—	0	0
Connecticut	0	—	0	0
MIDDLE ATLANTIC				
New York	18	2.1	0	0
New Jersey	4	0.6	0	0
Pennsylvania	1	1.9	0	0
EAST NORTH CENTRAL				
Ohio	1	0.2	0	0
Indiana	1	—	1	0.1
Illinois	43	0.9	0	0
Michigan	0	—	37	0.8
Wisconsin	0	—	41	0.9
WEST NORTH CENTRAL				
Minnesota	19	0.5	8	0.2
Iowa	118	2.2	39	0.7
Missouri	40	0.9	0	0
North Dakota	0	—	11	0.2
South Dakota	0	—	21	0.4
Nebraska	0	—	0	0
Kansas	0	—	1	0.02
SOUTH ATLANTIC				
Delaware	0	—	0	0
Maryland	0	—	1	0.02
Virginia	44	0.7	0	0
West Virginia	0	—	0	0
North Carolina	167	3.0	16	0.3

Positive for intestinal parasites — state public health laboratories,

Pathogenic protozoa						
Parasite species	<i>Dientamoeba fragilis</i>		<i>Entamoeba histolytica</i>		<i>Giardia lamblia</i>	
	No.	%	No.	%	No.	%
—	1	0.3	1	0.3	14	4.3
0.8	0	—	1	0.8	2	1.5
—	0	—	7	0.2	275	6.9
—	3	0.6	1	0.2	34	6.3
—	0	—	25	0.5	283	5.7
—	9	—	40	1.9	124	6.0
—	0	—	7	0.8	164	19.2
—	0	—	13	1.8	42	1.9
—	4	0.8	14	26.9	5	9.6
—	0	—	1	0.2	67	14.6
—	25	0.8	6	0.2	348	11.0
—	39	0.8	56	1.2	566	12.0
0.4	0	—	45	0.4	1,169	11.3
0.4	0	—	71	0.8	880	9.3
0.2	2	—	37	0.9	413	10.0
0.7	4	—	27	0.5	486	9.0
—	58	1.2	4	0.1	509	10.9
1.0	0	—	1	0.1	68	6.0
1.0	1	—	1	—	142	6.9
—	0	—	0	—	42	10.7
—	35	0.5	54	0.8	512	7.8
—	0	—	2	0.6	26	8.0
—	0	—	4	0.1	247	4.6
—	4	—	23	0.4	228	3.5
—	0	—	0	—	99	5.5
0.3	0	—	25	0.4	392	6.9

TABLE 3. Number and percentage of stool specimens positive for intestinal parasites, United States, 1987 — Continued

Reporting area	<i>Blastocystis hominis</i>		<i>Cryptosporidium</i> species
	No.	%	No.
South Carolina	20	0.5	12
Georgia	153	0.7	197
Florida	0	—	7
EAST SOUTH CENTRAL			
Kentucky	4	0.1	0
Tennessee	75	2.3	1
Alabama	20	0.2	0
Mississippi	0	—	1
WEST SOUTH CENTRAL			
Arkansas	0	—	0
Louisiana	0	—	0
Oklahoma	116	6.8	20
Texas	322	23.8	19
MOUNTAIN*			
Montana	0	—	2
Idaho	45	9.6	0
Colorado	71	3.3	0
New Mexico	0	—	19
Arizona	5	7.7	0
Utah	4	0.9	8
Nevada	58	2.4	3
PACIFIC			
Washington	16	0.4	6
Oregon	133	5.9	18
California	4,143	11.4	9
Alaska	9	0.3	0
Hawaii	3	0.5	0
Total	5,685	2.6	499

*Wyoming does not provide diagnoses for intestinal parasites.
—Less than 0.1%.

positive for intestinal parasites — state public health laboratories,

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Pathogenic protozoa						
Sporidium species	<i>Dientamoeba fragilis</i>		<i>Entamoeba histolytica</i>		<i>Giardia lamblia</i>	
	No.	%	No.	%	No.	%
0.3	1	—	49	1.1	195	4.5
0.9	43	0.2	49	0.2	1,008	4.6
0.1	0	—	84	0.6	645	4.5
—	0	—	5	0.2	129	4.4
—	0	—	1	—	188	5.8
—	0	—	43	0.5	497	5.4
—	0	—	0	—	620	6.9
—	0	—	1	0.1	111	6.5
—	0	—	27	0.4	353	6.0
1.2	22	1.3	4	0.2	120	7.0
1.4	91	6.7	48	3.6	112	8.3
0.1	0	—	0	—	88	6.1
—	10	2.1	7	1.5	68	14.5
—	2	—	41	1.9	209	9.8
1.0	16	0.9	5	0.3	118	6.3
—	0	—	5	7.7	4	6.2
1.9	2	0.5	5	1.2	40	9.4
0.1	7	0.3	8	0.3	160	6.9
0.1	120	2.9	75	1.8	424	10.2
0.8	6	0.3	65	2.9	225	10.0
—	637	1.8	840	2.3	2,829	7.8
—	0	—	6	0.2	184	5.7
—	0	—	7	1.2	33	5.7
0.2	1,142	0.5	1,841	0.9	15,497	7.2

Reporting area	<i>Chilomastix mesnili</i>		<i>Endolimax nana</i>	
	No.	%	No.	%
NEW ENGLAND				
Maine	0	—	7	2.2
New Hampshire	0	—	7	5.3
Vermont	0	—	50	1.2
Massachusetts	0	—	9	1.7
Rhode Island	0	—	6	0.3
Connecticut	23	1.1	126	6.3
MIDDLE ATLANTIC				
New York	2	0.2	4	0.3
New Jersey	2	0.3	54	7.1
Pennsylvania	0	—	11	21.3
EAST NORTH CENTRAL				
Ohio	0	—	0	—
Indiana	7	0.2	262	8.3
Illinois	7	0.1	315	6.3
Michigan	90	0.9	431	4.3
Wisconsin	31	0.3	138	1.3
WEST NORTH CENTRAL				
Minnesota	8	0.2	81	2.3
Iowa	12	0.2	68	1.3
Missouri	0	—	51	1.3
North Dakota	0	—	9	0.3
South Dakota	0	—	0	—
Nebraska	0	—	4	1.3
Kansas	7	0.1	241	3.3
SOUTH ATLANTIC				
Delaware	0	—	1	0.3
Maryland	8	0.1	174	3.3
Virginia	1	—	131	2.3
West Virginia	0	—	53	2.3
North Carolina	13	0.2	239	4.3
South Carolina	22	0.5	181	4.3
Georgia	11	0.1	396	1.3
Florida	22	0.2	297	2.3

Nonpathogenic protozoa

Tax	<i>Entamoeba coli</i>		<i>Entamoeba hartmanni</i>		<i>Iodamoeba buetschlii</i>	
	No.	%	No.	%	No.	%
2.2	2	0.6	3	0.9	2	0.6
5.3	3	2.3	1	0.8	0	—
1.2	77	1.9	56	1.4	1	—
1.7	15	2.8	0	—	0	—
0.1	266	5.4	0	—	0	—
6.1	122	5.9	35	1.7	29	1.4
0.5	4	0.5	0	—	1	0.1
7.6	32	4.5	14	2.0	4	0.6
21.2	6	11.5	11	21.2	3	5.8
—	1	0.2	0	—	0	—
8.3	314	9.9	46	1.4	45	1.4
6.6	267	5.6	52	1.1	26	0.6
4.2	465	4.5	81	0.8	83	0.8
1.5	486	5.2	50	0.5	26	0.3
2.0	141	3.4	8	0.2	28	0.7
1.3	83	1.5	20	0.4	6	0.1
1.1	83	1.8	9	0.2	2	—
0.8	6	0.5	0	—	1	0.1
—	15	0.7	3	0.1	0	—
1.0	10	2.6	0	—	0	—
3.7	227	3.5	97	1.5	24	0.4
0.3	2	0.6	0	—	0	—
3.2	167	3.1	21	0.4	20	0.4
2.0	123	1.9	18	0.3	23	0.4
2.9	68	3.8	0	—	3	0.2
4.2	144	2.5	47	0.8	29	0.5
4.2	221	5.1	171	4.0	32	0.7
1.8	449	2.1	160	0.7	29	0.1
2.1	397	2.8	33	0.2	9	0.1

TABLE 3. Number and percentage of stool specimens positive for *Chilomastix mesnili* and *Endolimax nana* in the United States, 1987 — Continued

Reporting area	<i>Chilomastix mesnili</i>		<i>Endolimax nana</i>	
	No.	%	No.	%
EAST SOUTH CENTRAL				
Kentucky	1	—	55	1
Tennessee	1	—	102	3
Alabama	2	—	178	1
Mississippi	2	—	68	0
WEST SOUTH CENTRAL				
Arkansas	0	—	19	1
Louisiana	0	—	32	0
Oklahoma	1	—	68	4
Texas	21	1.6	159	1
MOUNTAIN*				
Montana	1	0.1	4	0
Idaho	0	—	19	4
Colorado	6	0.3	165	1
New Mexico	8	0.4	72	3
Arizona	0	—	5	0
Utah	0	—	10	3
Nevada	3	0.1	38	1
PACIFIC				
Washington	22	0.5	370	8
Oregon	4	0.2	195	0
California	203	0.6	4,140	1
Alaska	1	—	28	0
Hawaii	0	—	13	0
Total	542	0.3	9,086	4

*Wyoming does not provide diagnoses for intestinal parasites.

—Less than 0.1%

Nonpathogenic protozoa						
max a	<i>Entamoeba coli</i>		<i>Entamoeba hartmanni</i>		<i>Iodamoeba buetschlii</i>	
	No.	%	No.	%	No.	%
1.9	134	4.6	0	—	10	0.3
3.1	131	4.0	16	0.5	5	0.2
1.9	219	2.4	72	0.8	66	0.7
0.8	242	2.7	1	—	2	—
1.1	22	1.3	4	0.2	0	—
0.6	49	0.8	0	—	4	0.1
4.0	40	2.3	9	0.5	4	0.2
11.8	120	8.9	113	8.4	14	1.0
0.3	35	2.4	1	0.1	0	—
4.0	24	5.1	6	1.3	2	0.4
7.7	138	6.5	65	3.0	13	0.6
3.9	79	4.3	24	1.3	4	0.2
7.7	8	12.3	0	—	0	—
2.4	17	4.0	5	1.2	0	—
1.6	26	1.1	10	0.4	3	0.1
8.9	344	8.3	176	4.2	42	1.0
8.7	185	8.2	112	5.0	80	3.6
11.4	3,084	8.5	1,505	4.1	599	1.6
0.9	43	1.3	13	0.4	0	—
2.3	10	1.7	1	0.2	1	0.2
4.2	9,146	4.2	3,069	1.4	1,275	0.6

Reporting area	<i>Ascaris lumbricoides</i>		<i>Enterobius vermicularis</i>	
	No.	%	No.	%
NEW ENGLAND				
Maine	0	—	0	—
New Hampshire	0	—	0	—
Vermont	8	0.2	0	—
Massachusetts	3	0.6	0	—
Rhode Island	15	0.3	7	0.1
Connecticut	17	0.8	5	0.2
MIDDLE ATLANTIC				
New York	0	—	1	0.1
New Jersey	29	4.0	0	—
Pennsylvania	1	1.9	0	—
EAST NORTH CENTRAL				
Ohio	0	—	0	—
Indiana	4	0.1	40	1.3
Illinois	13	0.3	1	—
Michigan	31	0.3	15	0.1
Wisconsin	43	0.5	10	0.1
WEST NORTH CENTRAL				
Minnesota	19	0.5	0	—
Iowa	6	0.1	1	—
Missouri	6	0.1	2	—
North Dakota	4	0.4	0	—
South Dakota	3	0.2	1	—
Nebraska	1	0.3	0	—
Kansas	43	0.6	3	—
SOUTH ATLANTIC				
Delaware	1	0.3	0	—
Maryland	24	0.4	6	0.1
Virginia	48	0.8	0	—
West Virginia	14	0.8	8	0.4
North Carolina	33	0.6	9	0.2
South Carolina	30	0.7	9	0.2
Georgia	180	0.8	530	2.4
Florida	43	0.3	90	0.6

s is	Nematodes					
	Hookworm		<i>Strongyloides stercoralis</i>		<i>Trichuris trichiura</i>	
	No.	%	No.	%	No.	%
-	0	-	0	-	0	-
-	0	-	0	-	0	-
-	3	0.1	0	-	5	0.1
-	0	-	0	-	1	0.2
0.1	257	5.2	23	0.5	128	2.6
0.2	24	1.2	16	0.8	40	1.9
0.1	1	0.1	1	0.1	1	0.1
-	30	4.2	4	0.6	28	3.9
-	1	1.9	0	-	2	3.8
-	0	-	0	-	0	-
1.3	22	0.7	12	0.4	19	0.6
-	84	1.8	54	1.1	93	2.0
0.1	115	1.1	44	0.4	58	0.6
0.1	485	4.9	103	1.1	76	0.8
-	62	1.5	12	0.3	16	0.4
-	25	0.5	4	0.1	12	0.2
-	8	0.2	0	-	3	0.1
-	4	0.4	2	0.2	2	0.2
-	0	-	0	-	0	-
-	0	-	0	-	0	-
-	67	1.0	29	0.4	102	1.6
-	0	-	0	-	0	-
0.1	18	0.3	5	0.1	26	0.5
-	60	0.9	27	0.4	43	0.7
0.4	7	0.4	5	0.3	20	1.1
0.2	48	0.8	33	0.6	29	0.5
0.2	1	-	1	-	3	0.1
2.4	121	0.6	27	0.1	68	0.3
0.6	22	0.2	6	-	45	0.3

**TABLE 3. Number and percentage of stool specimens positive for
United States, 1987 — Continued**

Reporting area	<i>Ascaris lumbricoides</i>		<i>Enterobius vermicularis</i>	
	No.	%	No.	%
EAST SOUTH CENTRAL				
Kentucky	21	0.7	4	0.1
Tennessee	30	0.9	6	0.2
Alabama	63	0.7	7	0.1
Mississippi	44	0.5	19	0.2
WEST SOUTH CENTRAL				
Arkansas	1	0.1	0	—
Louisiana	25	0.4	7	0.1
Oklahoma	5	0.3	1	0.1
Texas	11	0.8	6	0.4
MOUNTAIN*				
Montana	1	0.1	0	—
Idaho	3	0.7	1	0.2
Colorado	35	1.6	4	0.2
New Mexico	14	0.8	0	—
Arizona	0	—	0	—
Utah	2	0.5	0	—
Nevada	6	0.2	1	—
PACIFIC				
Washington	86	2.1	11	0.3
Oregon	30	1.3	0	—
California	712	2.0	43	0.1
Alaska	9	0.3	0	—
Hawaii	18	3.1	2	0.4
Total	1,735	0.8	850	0.4

*Wyoming does not provide diagnoses for intestinal parasites.

—Less than 0.1%.

Nematodes						
	Hookworm		<i>Strongyloides stercoralis</i>		<i>Trichuris trichiura</i>	
	No.	%	No.	%	No.	%
0.1	13	0.4	7	0.2	13	0.4
0.2	60	1.8	28	0.9	48	1.5
0.1	50	0.5	14	0.2	19	0.2
0.2	11	0.1	18	0.2	4	—
—	1	0.1	5	0.3	0	—
0.1	15	0.3	16	0.3	11	0.2
0.1	17	1.0	4	0.2	10	0.6
0.4	13	1.0	8	0.6	17	1.3
—	0	—	0	—	1	0.1
0.2	20	4.3	3	0.6	20	4.3
0.2	196	9.2	32	1.5	91	4.3
—	20	1.1	12	0.6	21	1.1
—	0	—	2	3.1	0	—
—	0	—	0	—	0	—
—	6	0.2	3	0.1	13	0.6
0.3	162	3.9	93	2.2	159	3.8
—	66	2.9	21	0.9	37	1.6
0.1	1,187	3.3	288	0.8	1,360	3.7
—	5	0.2	1	—	14	0.4
0.4	12	2.1	6	1.0	24	4.2
0.4	3,299	1.5	969	0.4	2,682	1.2

Reporting area	<i>Diphylobothrium latum</i>		<i>Dipylidium caninum</i>	
	No.	%	No.	%
NEW ENGLAND				
Maine	0	—	0	—
New Hampshire	0	—	0	—
Vermont	0	—	0	—
Massachusetts	0	—	0	—
Rhode Island	0	—	0	—
Connecticut	0	—	0	—
MIDDLE ATLANTIC				
New York	0	—	0	—
New Jersey	0	—	0	—
Pennsylvania	0	—	0	—
EAST NORTH CENTRAL				
Ohio	0	—	0	—
Indiana	0	—	0	—
Illinois	0	—	2	—
Michigan	0	—	0	—
Wisconsin	3	—	0	—
WEST NORTH CENTRAL				
Minnesota	2	0.1	0	—
Iowa	0	—	1	—
Missouri	0	—	0	—
North Dakota	0	—	0	—
South Dakota	0	—	0	—
Nebraska	0	—	0	—
Kansas	0	—	0	—
SOUTH ATLANTIC				
Delaware	0	—	0	—
Maryland	0	—	0	—
Virginia	0	—	2	—
West Virginia	0	—	0	—
North Carolina	1	—	1	—
South Carolina	0	—	0	—
Georgia	0	—	0	—
Florida	0	—	0	—

Cestodes							
<i>Hymenolepis diminuta</i>		<i>Hymenolepis nana</i>		<i>Taenia saginata</i>		<i>Taenia species</i>	
No.	%	No.	%	No.	%	No.	%
0	-	0	-	0	-	0	-
0	-	0	-	0	-	0	-
0	-	0	-	1	-	0	-
0	-	2	0.4	1	0.2	1	0.2
6	0.1	79	1.6	0	-	0	-
0	-	16	0.8	0	-	0	-
0	-	0	-	0	-	0	-
0	-	2	0.3	0	-	0	-
0	-	1	1.9	0	-	0	-
0	-	0	-	0	-	0	-
0	-	6	0.2	0	-	1	-
0	-	19	0.4	0	-	2	-
0	-	11	0.1	0	-	5	-
0	-	22	0.2	0	-	8	0.1
0	-	4	0.1	1	-	4	0.1
0	-	2	-	0	-	0	-
0	-	1	-	0	-	0	-
0	-	0	-	0	-	0	-
0	-	0	-	0	-	0	-
0	-	0	-	0	-	0	-
0	-	9	0.1	0	-	1	-
0	-	0	-	0	-	1	0.3
0	-	16	0.3	0	-	0	-
0	-	32	0.5	2	-	2	-
0	-	8	0.4	0	-	0	-
1	-	8	0.1	0	-	0	-
0	-	1	-	0	-	0	-
0	-	44	0.2	0	-	3	-
0	-	15	0.1	0	-	5	-

**TABLE 3. Number and percentage of stool specimens positive
United States, 1987 — Continued**

Reporting area	<i>Diphylobothrium latum</i>		<i>Dipylidium caninum</i>	
	No.	%	No.	%
EAST SOUTH CENTRAL				
Kentucky	0	—	0	—
Tennessee	0	—	0	—
Alabama	0	—	0	—
Mississippi	0	—	0	—
WEST SOUTH CENTRAL				
Arkansas	0	—	0	—
Louisiana	0	—	0	—
Oklahoma	0	—	0	—
Texas	2	0.2	3	0.2
MOUNTAIN*				
Montana	0	—	0	—
Idaho	0	—	0	—
Colorado	0	—	0	—
New Mexico	0	—	0	—
Arizona	0	—	0	—
Utah	0	—	0	—
Nevada	0	—	0	—
PACIFIC				
Washington	0	—	0	—
Oregon	1	—	1	—
California	2	—	1	—
Alaska	3	0.1	0	—
Hawaii	0	—	0	—
Total	14	—	11	—

*Wyoming does not provide diagnoses for intestinal parasites.

—Less than 0.1%.

Cestodes								
m n	<i>Hymenolepis diminuta</i>		<i>Hymenolepis nana</i>		<i>Taenia saginata</i>		<i>Taenia species</i>	
	No.	%	No.	%	No.	%	No.	%
—	2	0.1	2	0.1	0	—	3	0.1
—	0	—	6	0.2	0	—	2	0.1
—	0	—	0	—	0	—	0	—
—	0	—	4	—	0	—	2	—
—	0	—	0	—	0	—	0	—
—	0	—	0	—	0	—	0	—
—	0	—	1	0.1	1	0.1	1	0.1
0.2	0	—	12	0.9	4	0.3	1	0.1
—	0	—	0	—	0	—	0	—
—	0	—	3	0.6	0	—	0	—
—	1	0.1	8	0.4	0	—	0	—
—	0	—	10	0.5	0	—	3	0.2
—	0	—	0	—	1	1.5	0	—
—	0	—	3	0.7	0	—	1	0.2
—	0	—	9	0.4	0	—	0	—
—	0	—	44	1.1	0	—	14	0.3
—	0	—	20	0.9	0	—	5	0.5
—	6	—	479	1.3	3	—	38	0.1
—	0	—	1	—	0	—	3	0.1
—	0	—	0	—	0	—	1	0.2
—	16	—	900	0.4	14	—	107	—

Reporting area	<i>Clonorchis/ Opisthorchis</i>	
	No.	
NEW ENGLAND		
Maine	0	
New Hampshire	0	
Vermont	8	
Massachusetts	0	
Rhode Island	35	
Connecticut	50	
MIDDLE ATLANTIC		
New York	0	
New Jersey	1	
Pennsylvania	0	
EAST NORTH CENTRAL		
Ohio	1	
Indiana	18	
Illinois	66	
Michigan	0	
Wisconsin	50	
WEST NORTH CENTRAL		
Minnesota	24	
Iowa	11	
Missouri	0	
North Dakota	1	
South Dakota	0	
Nebraska	0	
Kansas	70	
SOUTH ATLANTIC		
Delaware	0	
Maryland	2	
Virginia	43	
West Virginia	0	
North Carolina	44	
South Carolina	0	
Georgia	122	
Florida	4	

Trematodes		
s/ his	<i>Schistosoma mansoni</i>	
	No.	%
—	0	—
—	0	—
0.2	0	—
—	0	—
0.7	0	—
2.4	3	0.2
—	0	—
0.1	0	—
—	0	—
0.2	0	—
0.6	0	—
1.4	0	—
—	0	—
0.5	0	—
0.6	2	0.1
0.2	0	—
—	0	—
0.1	0	—
—	0	—
—	0	—
1.1	0	—
—	0	—
—	0	—
0.7	0	—
—	0	—
0.8	0	—
—	0	—
0.6	4	—
—	1	—

TABLE 3. Number and percentage of stool specimens positive for *Clonorchis* and *Opisthorchis* in the United States, 1987 — Continued

Reporting area	<i>Clonorchis</i> / <i>Opisthorchis</i>	
	No.	
EAST SOUTH CENTRAL		
Kentucky	0	
Tennessee	106	
Alabama	39	
Mississippi	3	
WEST SOUTH CENTRAL		
Arkansas	0	
Louisiana	4	
Oklahoma	1	
Texas	3	
MOUNTAIN*		
Montana	0	
Idaho	14	
Colorado	54	
New Mexico	39	
Arizona	0	
Utah	1	
Nevada	0	
PACIFIC		
Washington	109	
Oregon	31	
California	269	
Alaska	1	
Hawaii	2	
Total	1,226	

*Wyoming does not provide diagnoses for intestinal parasites.

—Less than 0.1%.

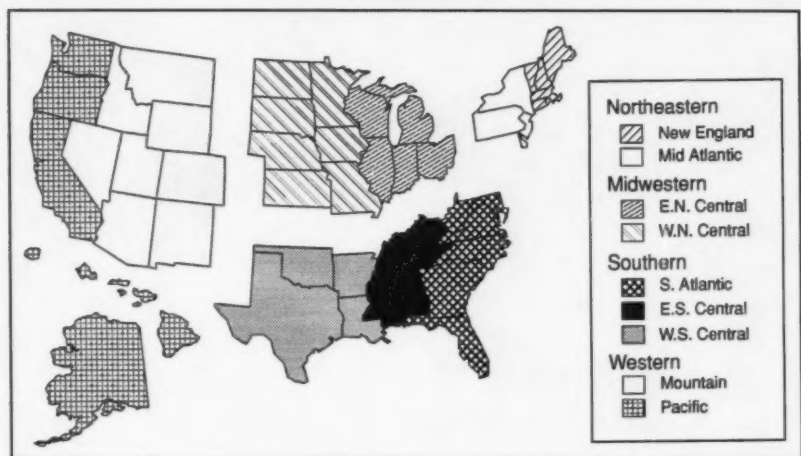
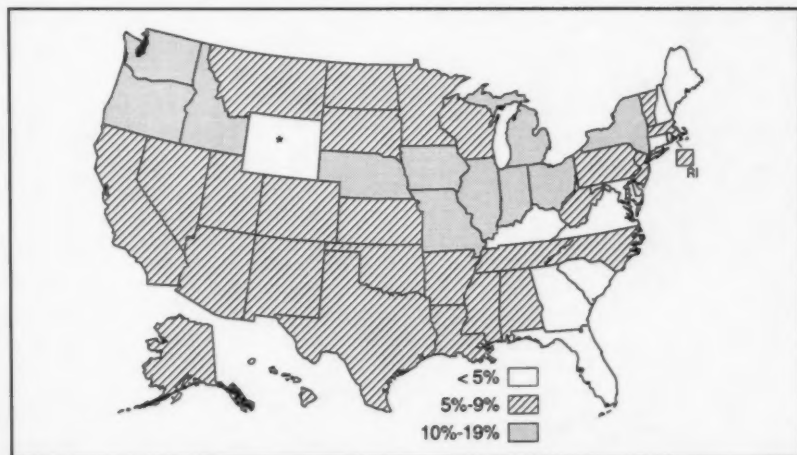
ve for intestinal parasites — state public health laboratories,

25

Trematodes		
s/ is	<i>Schistosoma mansoni</i>	
	No.	%
—	0	—
3.3	0	—
0.4	0	—
—	0	—
—	0	—
0.1	0	—
0.1	0	—
0.2	1	0.1
—	0	—
3.0	0	—
2.5	0	—
2.1	0	—
—	0	—
0.2	0	—
—	0	—
2.6	0	—
1.4	0	—
0.7	8	—
—	0	—
0.4	0	—
0.6	19	—



FIGURE 1. Map of the United States by quadrant and region

FIGURE 2. Percentages of stool specimens with *Giardia*, state laboratories, 1987

*Wyoming does not provide diagnoses for intestinal parasites.

FIGURE 3. Percentages of *Giardia lamblia* by quadrant and month, state laboratories, 1987

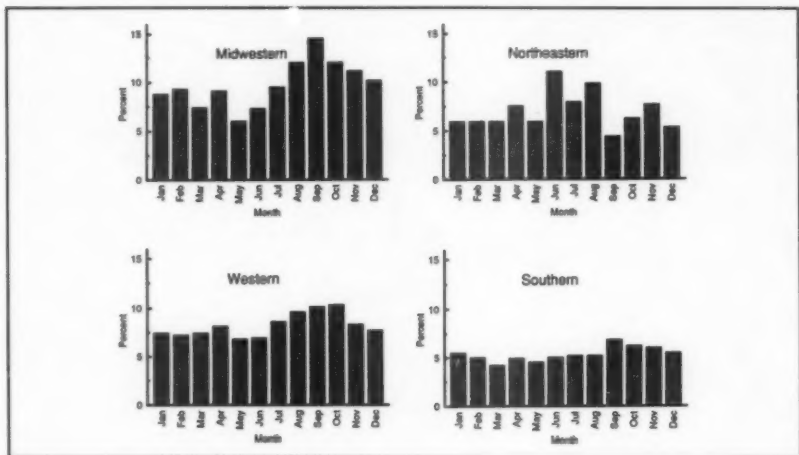


FIGURE 4. Percentages of stool specimens with hookworm, state laboratories, 1987

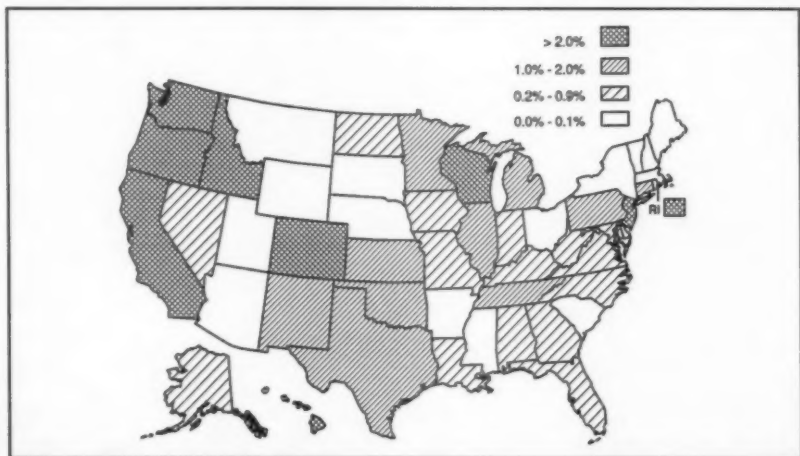


FIGURE 5. States reporting *Cryptosporidium* species in stool specimens, 1987



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